

Montana Department of Natural Resources and Conservation



Draft Real Estate Management Programmatic Environmental Impact Statement

June 21, 2004

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Draft Real Estate Management Programmatic Environmental Impact Statement

Montana Department of Natural Resources and Conservation

Errata Sheet

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- Add the following after “Bibliographical References”:
 Appendices (Available as a Separate Document):
 Appendix A: Public Comments and TLMD Staff Comments
 Following Issuance of Initial Scoping Document and Prior to Release
 of FPEIS
 Appendix B: Population and Economic Conditions of DNRC Land
 Office Regions
 Appendix C: GIS Data Report
 Appendix D: Land Use Forecasts, Financial Returns and Economic
 Impacts
 Appendix E: A Coarse Filter Process to Classify Land
 Appendix F: Sensitive Plant Species Occurring on State School Trust
 Lands
 Appendix G: Relationship of Growth to Trust Lands (series of
 maps)
- Remove “List of Charts”
- Under “List of Figures”, add: 3-1 Percent of Federal Ownership Within Each Land
 Office

All Narrative References

- All reference to the number of acres of school trust lands (surface) should be: 5.1-5.2
 million acres

Figure E-1

- The Land Office Locations names are missing from the map but may be found in
 Figure 2.1

Page E-7, under the heading of “Aggressive Management”

- Reference to Section 1.3 should be Section 1.4

Page E-9, E-10, and E-11; Tables E-3, E-4, E-5, E-6

- The acreage totals for each land office can be found in Tables 2-8, 2-9, 2-11, 2-12,
 respectively.

Page 1-7, top of page (The Draft PEIS and Final PEIS Processes will be added later)

- This statement is intended to indicate that the FEIS will describe the results of the DEIS public involvement processes and how the comments from that process were considered in the FEIS

Page 1-8, Section 1.6

- Reference to Section 1.3 should be 1.4
- Remove typo of “that that” in first sentence by deleting one “that”
- The last sentence in paragraph should be deleted and replaced with: “The Director of DNRC has decision-making authority for the Real Estate Management Programmatic Environmental Impact Statement. The Land Board will vote to approve implementation of the Real Estate Management Plan.”

Page 2-3, Section 2.1.1

- Reference to Section 1.3 (last line) should be “Section 1.4”.

Page 3-2, Section 3.2.1

- Reference to Appendix F should be Appendix G

Page 3-13

- Chart 3-1 should be Figure 3-1.

Page 3-19, Section 3.2.3

- Add a sentence to the end of this section that states: “The organizational structure of the TLMD is presented in Figure 3-2.”

Page 3-96, paragraph with dot “bullet”

- Remove reference to “Figure 3-X”

Page 3-99, Section 3.3.5.4, second paragraph

- Reference to Appendix E should be “Appendix F”

Page 3-109, Section 3.4.3.2, last line of second paragraph

- Remove the word, “General”

Page 4-4, first paragraph

- Appendix XXX should be “Appendix D”

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Draft Real Estate Management Programmatic Environmental Impact Statement

EXECUTIVE SUMMARY

INTRODUCTION

The Trust Land Management Division (the Division) of the Montana Department of Natural Resources and Conservation (DNRC or the Department) has prepared a Draft Programmatic Environmental Impact Statement (DPEIS or PEIS) to analyze and disclose impacts, and compare alternative management strategies for real estate management on state Trust Lands. The Final Environmental Impact Statement (or FEIS) will identify a preferred alternative that will, in turn, become the Real Estate Management Plan (Plan). The Plan will provide the Division's Real Estate Management Bureau (REMB) with consistent policy, direction and guidance in its management of real estate activities on the state's 5.1 million acres of Trust Lands.

THE PROPOSED PLAN

The Montana Environmental Policy Act (MEPA) requires the evaluation and disclosure of various management alternatives, from which the preferred alternative (the Plan) will be chosen. This process includes release of a Draft Programmatic Environmental Impact Statement (PEIS) for public review and comment. A Final Environmental Impact Statement (FEIS) will identify the Preferred Alternative.

The Director of the Montana Department of Natural Resources and Conservation has decision-making authority for the Real Estate Management Programmatic Environmental Impact Statement. All state school Trust Lands are under the direction and control of the State Board of Land Commissioners which includes the Governor, Superintendent of Public Instruction, State Auditor, Secretary of State, and Attorney General (Article X, section 4, 1972 Montana Constitution). The Land Board will vote to approve implementation of the Real Estate Management Plan.

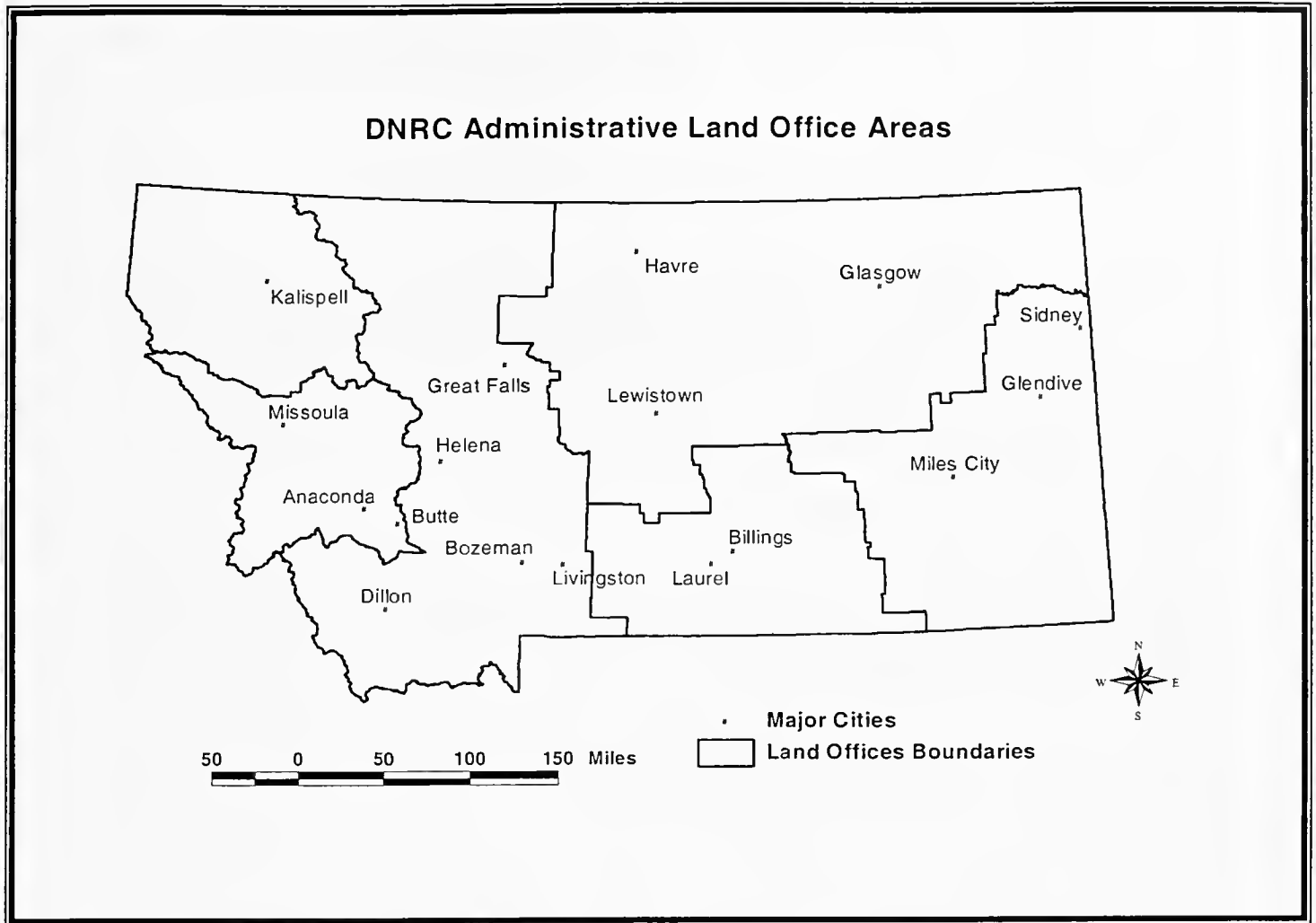
The mission of the TLMD is to "manage the State of Montana's Trust Land resources to produce revenues for the Trust beneficiaries while considering environmental factors and protecting the future income-generating capacity of the land." Revenue is generated on behalf of the Trust Land beneficiaries, including public schools, K-12th grade and universities, and other public institutions and facilities. This is accomplished through the management of almost 5.1 million acres (plus subsurface rights) of Trust Lands granted to the State of Montana at statehood by the federal government. More particularly, the REMB is responsible for generating revenue from real estate activities on Trust Lands related to residential, commercial, and industrial and conservation land uses.

LEGAL AND ADMINISTRATIVE FRAMEWORK.

Legal Framework – Trust Lands were granted to the state by the Federal Government when Montana was admitted into the Union. Currently, Montana's Trust Land acreage totals more than 5.1 million surface and 6.2 million mineral acres. Montana's Constitution and Enabling Act (1889) expressly require that Trust Lands be managed to provide revenue in support of the beneficiaries of the Trust Lands. The courts have consistently upheld this mandate.

Administrative Framework – Pursuant to 77-1-301, MCA, the DNRC manages the surface and mineral resources for the benefit of the common schools and other endowed institutions in the State of Montana, within six administrative land offices, under the direction of the State Board of Land Commissioners. The Department's obligation for management and administration of Trust Land is to obtain the greatest benefit for the beneficiaries. The greatest monetary return must be weighed against the long-term productivity of the land to ensure continued future returns to the trusts. The division is divided into four bureaus: Forest Management, Mineral Management, Agriculture and Grazing Management, and Real Estate Management (REMB). The plan would only address management activities of the REMB.

Figure E-1 DNRC Land Offices



The Current REMB Program – The REMB manages residential, commercial, industrial and conservation uses on Trust Lands and secondary uses on lands classified for timber, agriculture and grazing uses. Additionally, the REMB manages programs and processes for the issuance and acquisition of easements, the exchange of Trust Lands for private and federal lands, and the sales and purchases of Trust Lands. Under the current program, the REMB makes use of two categories of management tools – land use authorizations and land transactions in its management of residential, commercial, industrial, and conservation uses as outlined below:

- Land Use Authorizations – These provide for uses on Trust Lands for which the state is reimbursed but do not include the transfer of ownership. Authorizations include leases, licenses, and easements. Authority for the issuance and approval of land use authorizations rests with the DNRC.

- Land Transactions – Montana statute provides for the sale, purchase or exchange of Trust Lands. Authority for the issuance and approval of land use transactions rests with the State Board of Land Commissioners.

NEED FOR THE ACTION

The REMB is facing critical challenges in fulfilling its land management responsibilities. These challenges include:

- To undertake real estate management activities in a changing economic environment. Certain areas of Montana are enduring economic decline, others are experiencing rapid growth. In areas of high growth, opportunities exist to garner greater income on behalf of the Trust Land beneficiaries.
- To provide personnel with consistent policy, direction and guidance for the REMB in the management of state Trust Lands.

What Area will the Plan Address?

The Real Estate Management Plan will be used in the management of the entire surface holdings of the Division, approximately 5.1 million acres state-wide.

What will the Plan not Address?

It will not determine any specific real estate program or project. It will not address site specific issues nor will it make specific land use allocations.

What Time Period would be Addressed by the Plan?

The selected Real Estate Management Plan will continue through the year 2025. However, the Plan will contain provisions for updates and revisions over time to reflect changing conditions.

OBJECTIVES OF THE PLAN

The objectives of the plan are to identify a land management philosophy for the REMB and to:

- Generate increased revenue for Trust Land beneficiaries greater than current levels
- Comply with the Montana Environmental Policy Act (MEPA) requirements for developing a programmatic plan, DNRC's administrative procedures regarding MEPA (ARM 36.2 et. Seq.) and the Montana Antiquities Act (22-3-424, MCA), in their most current form
- Provide a more effective and efficient decision-making framework for residential, commercial, industrial and conservation uses
- Simplify the project level evaluation process
- Protect the long-term viability of Trust Land for residential, commercial, industrial and conservation uses

- Provide an opportunity for public involvement in decisions affecting land uses on Trust Lands
- Develop ways to work more closely with local government processes and policies

PURPOSE OF THE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (PEIS)

The purpose of this PEIS is to identify and evaluate alternative strategies for performing the program responsibilities of the REMB. In keeping with this purpose, essential components of this PEIS are to:

- Identify the roles, duties, and purpose of the REMB.
- Identify a systematic process for proposing and evaluating land use proposals on school Trust Lands;
- Evaluate the social, economic, and environmental effects of alternative plan philosophies; and
- Select a preferred plan to guide the decisions of the REMB.

THE SCOPE OF THIS PEIS

This PEIS presents a series of alternative programmatic management approaches and evaluates their potential environmental effects. It does not address any specific real estate program or project. It does not address site specific issues nor does it make specific land use allocations. Individual activities of the REMB will be subject to the provisions set forth in MEPA.

AREAS OF CONTROVERSY AND CONCLUSIONS

Issues that were identified through the initial public scoping process and by a DNRC staff are as follows:

- In order to meet its fiduciary responsibilities to the beneficiaries, the DNRC must increase revenue associated with the management of commercial, industrial, residential and conservation uses on Trust Lands.
- The REMB is currently managing land uses in a reactive manner without the benefit of well-defined planning process or decision making framework.
- The REMB currently lacks a methodology for determining the suitability of land for the development of the various uses under its jurisdiction.
- A successful real estate program will rely on a close association with local land use planning and regulatory processes.
- The relationship of the statutory requirements under MEPA to the selection and development of projects on Trust Lands is unclear.
- There is a need to identify opportunities for Categorical Exclusions (CE's), as provided under MEPA, consistent with the purpose for development of a programmatic plan (ARM 36.2.522(5))
- The REMB requires guidance in addressing the growth inducing impacts of development of commercial, residential and industrial uses on Trust Land

- The REMB requires guidance in addressing the impacts of growth with respect to transportation, air quality, noise, and other environmental concerns.
- The REMB requires guidance in addressing open space and wildlife habitat needs while providing income for trust beneficiaries.

In recent years, the people of the State of Montana have become increasingly concerned about the level of funding for public education. This concern came to light in a recent Montana District Court decision (April, 2004), that found Montana is violating its own Constitution by failing to adequately fund public education and must have a new financing plan in place by October of 2005. Although the final disposition of the case is not clear, the contribution that Trust Lands can make to the school funding base, will become increasingly important as the state struggles with finding sources of revenue to address school funding needs. At the same time, the Montana economy is becoming increasingly dependent on non-resource based industries. According the U.S. Bureau of Economic Analysis, the largest industries in Montana in 2001 were services, constituting 27.7 percent of earnings; state and local government, 14.9 percent; and retail trade, 11.3 percent.

The majority of Trust Lands will continue to be managed for their resource values under any of the alternatives presented in this PEIS. Grazing lands comprise almost 80 percent of the total surface acres managed by the TLMD. Agricultural (farming) land comprises about 11 percent of the total surface acres and forested acres comprise about 9 percent of the total land base. Non-resource based activities including commercial, industrial and, residential uses comprise less than one percent of the Trust Land base.

In many cases, the Trust Lands that offer the greatest opportunity for non-resource based development are those that are in growing communities where land use activities often have a high level of public interest. Each of the five alternatives adhere to a close association with the local project review processes to maximize public involvement and participation in the land use decision-making process.

THE ALTERNATIVES

Alternatives Considered but Eliminated From Detailed Study

DNRC is required to consider only alternatives that are realistic, technologically available, and that represent a course of action that bears a logical relationship to the proposal being evaluated (36.2.5552.b ARM; 75-1-201 (2) (iv) (C) (I), MCA).

Minimal/Passive

Some commentators suggested that the DNRC consider a passive alternative, where the REMB would defer new residential, commercial and industrial uses and allow existing land use authorizations to expire. The only uses allowed would have to be non-consumptive, non-extractive, and reversible. Land use activities involving commercial, industrial and residential development would not be authorized. Sales, exchanges and easements would be minimal. This alternative was eliminated from detailed study because it conflicts with the Mission of the Trust Lands Management

Division and first objective of the proposed action: Generate increased revenue for trust beneficiaries.

Aggressive Management

Some commented that the REMB should aggressively market residential, commercial and industrial uses wherever possible and use all exemptions available to maximize income to the beneficiaries. The DNRC should accept some adverse environmental effects and adverse public comment in order to earn greater revenue for the trust beneficiaries. This alternative was eliminated because it conflicts with the following objectives listed in Section 1.3:

- It would be in direct conflict with the TLMD's mission to manage Trust Land resources to produce revenues for the trust beneficiaries while considering environmental factors and protecting the future income-generating capacity of the land.
- It would de-emphasize opportunities for public involvement in decisions affecting real estate management.
- It would not simplify the project level evaluation process

Long Term Resource Management and Conservation

Some suggested REMB emphasize the protection of wildlife habitat, open space and public recreation opportunity, and the placement of public facilities on Trust Lands. Residential, commercial and industrial uses would be considered only to the degree that such uses enhanced or did not conflict with these primary resource values.

The primary focus would be placed on using lease and easement agreements and other conservation strategies for the preservation of wildlife habitat, open space, and other natural and cultural resources. This approach would be primarily taken in rural areas, although in certain circumstances it may be appropriate in urban areas with unique natural resource values. If there were conflicts, wildlife and natural resource values would take precedence over all other uses, including public access and recreation.

This alternative was eliminated because it did not address the TLMD's mission related to the generation of revenue for the beneficiaries. In addition, conservation would be a possible land use under any of the alternatives being considered in this EIS, provided the Trusts were fully compensated for the foregone development rights. Finally, current legislation (77-2-101, MCA) limits the use of conservation easements on Trust Lands. Under this statute, conservation easements may only be granted to the Montana Department of Fish, Wildlife, and Parks (FWP) for parcels that are surrounded by or adjacent to land owned by FWP as of January 1, 2001. Easements may be awarded to a nonprofit corporation only for parcels that are surrounded by or adjacent to land owned by that same nonprofit corporation as of January 1, 2001. However, Alternatives B-1 and C-1 were influenced by these concepts.

Alternatives Presented

This PEIS presents five alternative approaches to real estate management developed in response to and driven by the issues, including a no-action alternative. Under all the alternatives:

- Trust Lands would share proportionately in the future growth of commercial, industrial, and residential land uses within the six land office regions of the state.
- The suitability of Trust Lands for developed and conservation uses would be determined with respect to the physical and natural environment as well as to the proximity to community services and infrastructure.
- The REMB would utilize an ID Team approach to prioritize project opportunities on a state-wide basis
- All land use proposals on Trust Lands would be subject to local land use regulatory processes as appropriate.
- All alternatives would allow for unlimited conservation uses.

Evaluation measures for each alternative primarily pertain to acres of new developed or conservation uses and how those uses on Trust Lands would affect the natural and social environment and the revenue return to the beneficiaries. The acreage estimates of increased revenue-generating uses of Trust Lands are not goals or targets. The levels (acres) of development provide a measurement for monitoring the progress of the REMB in achieving its desired share of the anticipated growth in land use.

The Real Estate Management Program alternatives described in this Programmatic EIS depict varying levels of participation by DNRC in the growth market in Montana. For purposes of the analysis in this document, it is assumed that the growth would occur with or without DNRC sharing in a portion of the market through the program approaches outlined in this Programmatic EIS.

Tables E-1 and E-2 present estimates of total anticipated rural residential and commercial/industrial growth measured in acres on *all* lands in each DNRC land office region.

Table E-1. Growth Estimates for Rural Residential Acreages on all Land Ownerships					
Land Office Region	Growth Estimates (acres) by Time Period				
	2003-2010	2011-2015	2016-2020	2021-2025	Totals
NWLO	10,776 – 17,960	7,016 – 11,694	7,181 – 11,968	7,474 – 12,456	32,446-54,078
SWLO	8,575 – 14,291	5,918 – 9,863	6,122 – 10,203	6,344 – 10,574	26,959-44,931
CLO	2,739 – 4,565	5,293 – 8,821	5,570 – 9,283	5,818 – 9,696	19,420-32,365
NELO	(225) – (135)	46 - 76	67 - 111	96 – 160	(16) - 212
SLO	3,270 – 5,450	2,197 – 3,661	2,289 – 3,815	2,405 – 4,008	10,161-16,934
ELO	(213) – (128)	31 - 51	72 - 120	49 - 81	(61) - 124
Grand Total	24,922 – 42,003	20,501 – 34,166	21,301 – 35,400	22,186 – 36,975	88,909-148,644

Jackson, 2004

Table E-2. Growth Estimates for Commercial/Industrial Acreages on all Land Ownerships					
Land Office Region	Growth Estimates (acres) by Time Period				
	2002-2010	2011-2015	2016-2020	2021-2025	Totals
NWLO	2,540 – 4,234	1,678 – 2,796	1,854 – 3,090	2,051 – 3,418	8,123-13,538
SWLO	3,157 – 5,261	2,090 – 3,483	2,344 – 3,906	2,615 – 4,358	10,206-17,008
CLO	3,784 – 6,306	2,379 – 3,965	2,685 – 4,475	2,977 – 4,961	11,825-19,707
NELO	777 – 1,295	615 – 1,025	668 – 1,114	736 – 1,226	2,796-4,660
SLO	2,606 – 4,344	1,725 – 2,875	1,935 – 3,225	2,159 – 3,598	8,425-14,042
ELO	320 - 533	132 - 220	155 - 258	170 - 283	777-1,294
Grand Total	13,184 – 21,973	8,619 – 14,364	9,641 – 16,068	10,708 – 17,844	42,152-70,249

Jackson, 2004

Alternative A – The Current Program

Under this alternative, REMB would move the existing real estate program forward into the future in a fashion that remains cognizant of current market conditions. New projects would be identified and prioritized primarily based upon outside inquiries and/or proposals from DNRC personnel with land planning expertise. Under this alternative, it is expected that Trust Lands would realize less, on a proportional basis, than a fair share of the regional market growth. Estimated residential, commercial, and industrial growth under Alternative A assumes Trust Lands share 2-5% of the new anticipated growth, depending on location. The projected range of annual growth of “rural residential” and “commercial/industrial” on Trust Lands is presented in Tables E-3 and E-4.

Table E-3. Alternative A: Growth Estimates for Rural Residential Acreages on Trust Lands				
Land Office Region	Growth Estimates (acres) by Time Period			
	2003-2010	2011-2015	2016-2020	2021-2025
NWLO	539 - 898	351 – 585	395 – 599	374 – 623
SWLO	300 - 500	207 – 345	215 – 358	222 – 370
CLO	110 - 183	212 – 353	223 – 371	233 – 358
NELO	(10) – (6)	2 – 4	3 – 5	5 – 8
SLO	65 - 109	44 – 74	46 – 76	48 – 80
ELO	(5) – (9)	2 - 3	3 – 5	2 - 4
Total Ranges	999-1675	818-1364	885-1414	884-1443

Table E-4. Alternative A: Growth Estimates for Commercial/Industrial Acreages on Trust Lands				
Land Office Region	Growth Estimates (acres) by Time Period			
	2002-2010	2011-2015	2016-2020	2021-2025
NWLO	127 – 212	84 – 140	103 – 171	102 – 171
SWLO	111 – 184	73 – 122	92 – 153	92 – 153

Table E-4. Alternative A: Growth Estimates for Commercial/Industrial Acreages on Trust Lands				
Land Office Region	Growth Estimates (acres) by Time Period			
	2002-2010	2011-2015	2016-2020	2021-2025
CLO	151 – 252	95 – 159	119 – 199	119 – 199
NELO	35 – 58	28 – 46	33 – 55	33 – 55
SLO	52 – 87	35 – 58	43 – 72	43 – 72
ELO	13 - 21	5 - 9	7 – 11	7 - 11
Total Ranges	489-814	320-534	397-661	396-661

Under Alternative A, the current program, the REMB considers conservation opportunities as a priority on a percentage of those Trust Lands lying adjacent to existing conservation type lands. These would include federally designated areas such as National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers; Wildlife and Game Refuges and Public/Private Conservation Easements (hereinafter referred to as conservation type lands).

Staffing and staffing expertise would remain unchanged. There may be some limited sharing of personnel among Land Offices where certain expertise may be brought to a specific project on an as needed basis.

The projected rate of return on equity for Alternative A would be approximately 2.76%.

Alternative B – Diversified Portfolio

Alternative B seeks to secure a broad based portfolio of income producing properties. This would be accomplished through proactive strategies intended to keep pace with regional market growth and by capturing opportunities identified by others. The REMB would make use of a funnel filtration process and assume a more active role [as compared to Alternative A] in creating new revenue opportunities for the trusts. This would include the identification of lands suitable for development and the active pursuit of the entitlements that would help position the lands in the market place. In addition, more staff resources would be directed towards selecting and ranking projects for more specific project level review.

The range of projected annual growth of “rural residential” and “commercial/industrial” on Trust Lands under Alternative B is presented in Tables E-5 and E-6. These values represent a direct proportion of shared growth based upon the proportion of Trust Lands to other land ownerships (minus “federal” and “water”) within a specific land office region

Table E-5. Alternative B: Growth Estimates for Rural Residential Acreages on Trust Lands				
Land Office Region	Growth Estimates (acres) by Time Period			
	2003-2010	2011-2015	2016-2020	2021-2025
NWLO	1077 – 1795	702 – 1170	718 – 1196	747 – 1245
SWLO	600 – 1000	414 – 690	428 – 714	444 – 740
CLO	219 – 365	424 – 706	446 – 743	467 – 776

Table E-5. Alternative B: Growth Estimates for Rural Residential Acreages on Trust Lands

Land Office Region	Growth Estimates (acres) by Time Period			
	2003-2010	2011-2015	2016-2020	2021-2025
NELO	(12) – (20)	5 – 8	6 – 10	8 – 14
SLO	131 - 218	88 – 146	92 - 153	96 – 160
ELO	(11) – (18)	2 – 4	6 - 10	4 - 6
Total Ranges	2004-3340	1635-2724	1696-2826	1766-2165

Table E-6. Alternative B: Growth Estimates for Commercial/Industrial Acreages on Trust Lands

Land Office Region	Growth Estimates (acres) by Time Period			
	2002-2010	2011-2015	2016-2020	2021-2025
NWLO	254 – 423	168 – 280	185 – 309	205 – 342
SWLO	221 – 368	146 - 244	164 – 274	183 – 305
CLO	303 – 505	190 – 317	215 – 358	238 – 397
NELO	70 – 117	55 – 92	60 – 100	66 – 110
SLO	104 – 174	69 – 115	77 – 129	86 – 144
ELO	26 - 43	11 - 18	12 - 21	14 - 23
Total Ranges	978-1630	639-1066	713-1191	792-1321

Under Alternative B, the REMB would consider conservation opportunities a priority on a percentage of those Trust Lands lying within one half mile of land with existing conservation type lands. Conservation use would generally be achieved through the sale or lease of development rights on lands with residential values.

Alternative B would require the allocation of additional financial resources to the REMB. Additional funding would be necessary for increased staffing and project support, including costs to improve land entitlements. Additional funding sources may be sought to achieve program objectives through a development improvement fund (revolving) and a percentage share of lease and sale revenue.

The projected rate of return on equity for Alternative B would be approximately 4.66% - 5.13%, with the latter value reflecting the added benefit of improved land entitlements.

Alternative B-1 – Diversified Portfolio – Conservation Priority

Alternative B-1 incorporates all of the elements of Alternative B with the exception of Conservation uses on Trust Lands. As under Alternative B, the REMB would consider conservation opportunities a priority on a percentage of those Trust Lands lying within one half mile of lands with existing conservation authorizations. Conservation use would generally be achieved through the sale of development rights on lands with residential values. Half of the estimated rural residential development on Trust Lands anticipated under Alternative B would be set aside for additional conservation opportunities.

Alternative C – Focused Portfolio

Under this alternative, the REMB would actively evaluate the Trust Land revenue opportunities on a continual basis to determine a full range of project opportunities. The REMB would react quickly to market opportunities and attempt to realize a higher proportion of the anticipated growth in regional markets. Projects that return the highest net revenue to the trusts would be given higher priority under this alternative.

The projected range of annual growth of “rural residential” and “commercial/industrial” on Trust Lands under Alternative C is presented in Tables E-7 and E-8. Depending on the land office region, growth of residential, commercial, and industrial uses on Trust Land would range between 8 and 20% of the anticipated growth of those sectors. These percentages assume that Trust Lands will experience a higher proportion (on a per acre ratio with other lands) of residential, commercial, and industrial uses.

Table E-7. Alternative C: Growth Estimates for Rural Residential Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2003-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	2156 – 3592	1403 – 2339	1436 – 2394	1495 – 2491	6490-10816
SWLO	1200 – 2000	829 – 1381	857 – 1429	888 – 1480	3774-6290
CLO	438 – 730	847 – 1411	891 – 1485	931 – 1551	3107-5177
NELO	(24) – (40)	8 – 14	12 – 20	17 – 29	13-23
SLO	289 – 481	176 – 293	183 – 305	193 – 321	841-1400
ELO	(20) – (34)	5 - 9	12 - 20	8 - 13	5-8
Total Ranges	4039-6729	3268-5447	3391-5653	3532-5885	14230-23714

Table E-8. Alternative C: Growth Estimates for Commercial/Industrial Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2002-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	508 – 847	336 – 559	371 – 618	410 – 683	1625-2707
SWLO	442 – 737	293 – 488	328 – 547	366 – 610	1429-2382
CLO	605 – 1009	381 – 634	430 – 716	476 – 793	1892-3152
NELO	140 – 233	111 – 185	120 – 200	133 – 221	504-839
SLO	208 – 347	138 – 230	155 – 258	173 – 288	674-1123
ELO	51 - 85	21 - 35	25 - 41	27 - 45	124-206
Total Ranges	1954-3258	1280-2131	1429-2380	1585-2640	6248-10409

Under Alternative C, the Bureau would consider conservation opportunities as a high priority on a percentage of those Trust Lands that lie within one mile of lands with existing conservation

authorizations. Conservation use would generally be achieved through the sale or lease of development rights on lands with residential values.

Alternative C would require a more specialized staff. While the Bureau would still try to share expertise among Land Offices, the level of activity would require a larger staff over all. As under Alternative B, expertise would be needed in planning, real estate, appraisal, marketing and finance. It is estimated that four additional staff would be required as compared to Alternative A.

The projected rate of return on equity for Alternative C would be approximately 5.48% - 6.35%, with the latter value reflecting the added benefit of improved land entitlements.

Alternative C1 - Focused Portfolio - Conservation Priority

Alternative C-1 incorporates all of the elements of Alternative C with the exception of Conservation uses on Trust Lands. As under Alternative C, the REMB would consider conservation opportunities a priority on a percentage of those Trust Lands lying within one mile of lands with existing conservation authorizations. Conservation use would generally be achieved through the sale of development rights on lands with residential values. Half of the estimated rural residential development on Trust Lands anticipated under Alternative C would be set aside for additional conservation opportunities.

ALTERNATIVES – COMPARISONS AND TRADE-OFFS

The main difference between the alternatives is the relative degree to which the REMB will participate in and benefit from the expected increase of demand in land uses in Montana. Differences among alternatives relate to the philosophical approaches (emphases) to land management in responding to growth in the residential, commercial, and industrial sectors of the economy. The main tradeoffs between the alternatives include:

- **Level of staffing and expertise available** – A greater level of staffing would enable the REMB to engage in more real estate activities and therefore realize a higher benefit to the Trust.
- **Amounts of revenue generated on behalf of the Trust Land beneficiaries** – The amount of revenue would vary by alternative, with Alternative A – the Current Program generating the least and Alternative C – Focused Portfolio generating the most. Increased initial investments in personnel and land entitlements result in a greater return on investment.
- **The extent to which various real estate tools are employed** – Alternatives B, B-1, C and C-1 would require greater employment of real estate tools including both land transactions and authorizations.
- **The amount of money directed to the improvement of entitlements.** (Entitlements are land use authorizations such as those provided through local zoning ordinances and physical improvements that facilitate growth such as roads and sewer systems.) – Expenditures made to improve entitlements would increase under Alternatives B, B-1, C and C-1 and would result in a higher return on investment.

SELECTION OF A PREFERRED ALTERNATIVE

The PEIS does not present a preferred alternative. A preferred alternative will be selected following additional public comments through the DEIS process.

ENVIRONMENTAL EFFECTS

A systematic land suitability and project identification process would guide all project level decisions under the proposed plan alternatives. A funnel filter process defines an approach that begins with a land suitability analysis at a landscape level and moves through a series of economic and site evaluation processes to help identify lands that may have some suitability for future development or conservation opportunities. Lands generally unsuitable for developed uses would fall out early in the process. All aspects of the physical, biological, and social environment are considered. A basic assumption is that all land use proposals would ultimately be reviewed, as appropriate, under local land use regulations. Project impacts and project mitigation measures would be identified through these series of processes. MEPA compliance would also be considered for all project actions.

SUMMARY COMPARISON OF THE EFFECTS OF ALL ALTERNATIVES ON THE PROJECT OBJECTIVES AND ON THE RELEVANT ENVIRONMENTAL FACTORS

The alternatives consider growth options for "commercial", "conservation", "industrial", and "residential" on school Trust Lands. In each alternative, an assumption is made that Trust Lands would share (not create) expected future growth. It is assumed that the expected growth would occur regardless; and that certain Trust Lands may actually be suitable and capable of capturing some of that expected growth. In certain situations, it could be argued that development of some Trust Lands may be more environmentally appropriate than development of non-Trust Lands. This would be the situation if development activities were forced to "leap" beyond Trust Lands to meet local development demands or if Trust Lands were better positioned for development due to favorable topography, location, and access to infrastructure. The only clear distinction of impacts relates to the management objectives of the TLMD and revenue parameters. For example, it can be assumed that increased development (including conservation) on Trust Lands would generate more revenue to the trust beneficiaries and more taxes (property and personal) to local and state agencies. However, development on Trust Lands does not necessarily create new jobs since the development would occur anyway. Under each of the alternatives, new development potential on Trust Lands never exceeds 1% of the total Trust Land acreage through the year 2025. The percentage share of development is even less significant when considered in the context of the entire acreage (all landowners). Table E-9 attempts to summarize the management and environmental distinctions between alternatives without consideration of the broader context of land use development on non-Trust Lands.

Table E-9. Summary Comparison of Effects					
	Alternatives				
	A	B	B-1	C	C-1
Growth By Land Use Type					

Table E-9. Summary Comparison of Effects						
		Alternatives				
		A	B	B-1	C	C-1
	Residential	+	++	+	+++	++
	Commercial	+	++	++	+++	+++
	Industrial	O	+	+	+	+
	Conservation	+	+	++	+	+++
Growth By Location						
	Urban	O	+	+	++	++
	Suburban	O	+	+	++	++
	Rural	O	+	O	++	+
Project Selection by DNRC						
	Reactive	O	+	+	+	+
	Proactive	O	+	+	++	++
Real Estate Tools						
	Leases	O	+	+	++	++
	Licenses	O	+	+	+	+
	Easements	O	+	+	+	+
	Land Banking	O	+	+	++	++
	Land Exchanges	O	+	+	++	++
	Land Sales	O	+	+	+	+
	Joint Ventures	O	+	+	++	++
	Marketing	O	+	+	++	++
	Property Purchases	O	+	+	++	++
Project Management Roles						
	DNRC	O	+	+	++	++
	Developer	O	+	+	+	+
	Local Government	O	+	+	+	+
	Partnerships	O	+	+	++	++
Administrative Support						
	Staffing	O	+	+	++	++
	Funding	O	+	+	++	++
	Statutory Authorizations	O	+	+	+	+
Financial						
	Revenue to Trust	+	++	+	+++	++
	Tax Revenue	+	++	+	+++	++
	PILT	O	O	O	O	O
	Job Creation	O	+	O	++	+
	Asset Management	O	+	+	++	++
Environmental Review						
	Local Land Use Regulations	+	+	+	+	+
	MEPA	+	+	+	+	+

Table E-9. Summary Comparison of Effects						
		Alternatives				
		A	B	B-1	C	C-1
Environmental Affects						
	Geology & Soil	O	+	+	+	+
	Water Resources	O	O	O	O	O
	Fisheries	O	O	O	O	O
	Wildlife	O	+	+	+	+
	Vegetation	O	+	+	+	+
	Air Quality	O	+	+	+	+
	Noise	O	+	+	+	+
	Aesthetics	O	O	O	O	O
	Cultural	O	O	O	O	O
	Community Infrastructure	O	O	O	O	O
	Taxes	O	+	+	++	++
Note: O = current condition; + = elevated and relative impact from current condition						

DNRC has used available environmental data concerning the existing Real Estate Management Program to predict environmental effects associated with each alternative. The affected environment is described in Chapter 3 of the PEIS and the prediction of effects on environmental resources is described in Chapter 4.

Summary Table of Predicted Attainment of Objectives

Table E-10 depicts the degree to which each Alternative Meets Project Objectives

Table E-10. Summary of Predicted Attainment of Objectives					
Objective	A	B	B1	C	C1
Objective 1	+	++	+	+++	++
Objective 2	+	+	+	+	+
Objective 3	O	+	+	+	+
Objective 4	O	+	+	+	+
Objective 5	O	+	+	+	+
Objective 6	O	+	+	+	+
Objective 7	O	+	+	++	++

Note: "O" indicates a status quo relationship and + indicates a strong relationship

RELATIONSHIP OF ALTERNATIVES TO ISSUES RAISED IN THE SCOPING PROCESS

Based on comments received and on prior experience with the administration of the Real Estate Management Bureau, the DNRC staff identified the following issues for evaluation in this PEIS:

1. In order to meet its fiduciary responsibilities to the beneficiaries, the DNRC must increase revenue associated with the management of commercial, industrial, residential and conservation uses on Trust Lands.
2. The REMB is managing land uses in a reactive manner without the benefit of well-defined planning process or decision making framework.
3. The REMB currently lacks a methodology for determining the suitability of land for the development of the various uses under its jurisdiction.
4. A successful real estate program will rely on a close association with local land use planning and regulatory processes.
5. The relationship of the statutory requirements under MEPA to the selection and development of projects on Trust Lands is unclear.
6. There is a need to identify opportunities for Categorical Exclusions (CE's), as provided under MEPA, consistent with the purpose for development of a programmatic plan (ARM 36.2.522(5))
7. The REMB requires guidance in addressing the growth inducing impacts of development of commercial, residential and industrial uses on Trust Land
8. The REMB requires guidance in addressing the impacts of growth with respect to transportation, air quality, noise, and other environmental concerns.
9. The REMB requires guidance in addressing open space and wildlife habitat needs while providing income for trust beneficiaries.

Table E-11 summarizes how these issues are reflected in the design of the alternatives presented in this chapter.

Table E-11. Issues As Addressed by Alternatives							
Issue #	Alternatives					Document Reference by Section	Supportive Statement
	A	B	B-1	C	C-1		
1	O	++	+	+++	++	2.3, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.9.1, 3.2.3, 3.2.4, 3.2.5, 4.1.3, 4.2.3, 4.2.4	All action alternatives provide for increased revenue to the beneficiaries. Increased revenue is linked to market share of residential, commercial, and industrial uses.
2	O	+	+	+	+	2. 1, 2.3.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2	The funnel filter analysis and project selection process provide a framework for decision-making for all action alternatives. All alternatives require compliance with local land use regulatory processes.
3	O	+	+	+	+	2. 1, 2.3.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1,	The funnel filter process includes a landscape assessment of general land suitability and a demographic and market analysis to link growth objectives to regional market conditions. Other

Table E-11. Issues As Addressed by Alternatives

Issue #	Alternatives					Document Reference by Section	Supportive Statement
	A	B	B-1	C	C-1		
						4.1.3, 4.2.2	layers of the filter process are project level evaluations that help to further narrow land use options.
4	O	+	+	++	++	2.3.1, 2.6 (all subsections), 3.2.4, 3.2.6, 4.1, 4.1.3, 4.2.5, 4.2.6, 4.2.7, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 4.2.15, 4.3, 5.2, 5.3	An underlying premise of all alternatives, including the current program is that the REMB would work with local government land planning and regulatory processes.
5	O	+	+	+	+	2.3.1, 2.6 (all subsections), 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3, 5.3	Under all the action alternatives, potential and proposed projects will be subject to a well-defined funnel filtration process that will address a variety of site suitability issues. Through local land use regulatory processes, the REMB will meet a substantial portion of its responsibility under MEPA.
6	O	+	+	++	++	2.3.1, 2.6 (all subsections), 3.2.4, 3.2.6, 4.1, 4.1.3, 4.2.5, 4.2.6, 4.2.7, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 4.2.15, 4.3, 5.1	Compliance with local land use regulatory processes will, in certain cases, address all of the Department's responsibilities under MEPA and support rationale for certain categorical exclusions.
7	O	++	++	++	++	2.3.1, 2.6 (all subsections), 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3	An underlying assumption is that Trust Lands will share in expected community growth. The funnel filter analysis provides a framework for decision-making for all action alternatives regarding growth inducing impacts, such as sprawl.
8	O	+	+	+	+	2.3.1, 2.6 (all subsections), 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3	The funnel filter analysis provides a framework for decision-making for all action alternatives with respect to overall environmental concerns.
9	O	+	+	+	+	2.3.1, 2.6 (all subsections), 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3	The funnel filter analysis provides a framework for decision-making for all action alternatives with respect to wildlife and habitat protection. Coordination between the HCP and the SFLMP is also anticipated.

CATEGORICAL EXCLUSIONS (CE's)

DESCRIPTIONS OF ACTIONS WHERE CATEGORICAL EXCLUSIONS WOULD BE CONSIDERED

As described in Chapter 5, CE's are appropriate in those situations where no significant impact will occur as a result of the exemption and as provided for in MCA 77-1-121. The level of MEPA review will be commensurate with DNRC's obligations under MCA 77-1-121 recognizing local governmental actions and associated analysis when appropriate.

Chapter 5 also details local government regulations and resulting actions, the level of analysis associated with those actions, and how they interrelate to satisfy MEPA requirements. Table E-12 lists those situations when categorical exclusions from MEPA documentation would be pursued under all alternatives.

Table E-12. MEPA Exclusions/Exemptions – When Considered/Applied
Exempt per 36.2.523(5) A.R.M.
Lease and License administration including assignments, renewals and enforcement of terms and conditions
Lease/License modifications consistent with local regulations or MEPA document
Project Design
REMB Project List
Marketing
Administrative actions: routine, clerical or similar functions of a department, including but not limited to administrative procurement, contracts for consulting services, and personnel actions
Minor repairs, operations, or maintenance of existing equipment or facilities
Investigation and enforcement: data collection, inspection of facilities or enforcement of environmental standards
Ministerial actions: actions in which the agency exercises no discretion, but rather acts upon a given state of facts in a prescribed manner
Actions that are primarily social or economic in nature and that do not otherwise affect the human environment
Exempt per 77-1-121, M.C.A.
Development or adoption of a growth policy or a neighborhood plan pursuant to Title 76, chapter 1
Development or adoption of zoning regulations
Review of a proposed subdivision pursuant to Title 76, chapter 3
Actions related to annexation
Development or adoption of plans or reports on extension of services; and Other actions that are related to local planning
Property Purchase
Short-term land use license (less than 7 days) involving no resource extraction or developed uses and conformity with applicable local permitting or land use regulations. Examples would include weddings, dog shows, photography shoots, charity fund raising events, etc.

How to Read this Programmatic Environmental Impact Statement

This overview has been provided to assist in reading this Programmatic Environmental Impact Statement (PEIS) more effectively. This PEIS has been prepared in accordance with the Montana Environmental Policy Act (MEPA) to

- provide the Director of the Montana Department of Natural Resources and Conservation (DNRC) with sufficient information to make an informed and reasoned decision concerning the approach that will be taken in real estate management on State of Montana Trust Lands. The preferred alternative will become the management philosophy of the DNRC Real Estate Management Bureau.
- inform members of the interested public of the alternatives and the environmental effects of these alternatives on the human environment and the decision making process so that they may express their opinions to the Director of the DNRC.

This PEIS follows the recommended organization and content established by the Administrative Rules of Montana and consists of the following chapters:

1. Purpose and Need For the Proposed Action
2. Real Estate Management Plan Alternatives
3. The Affected Environment
4. Environmental Consequences
5. Categorical Exclusions

The document also includes a list of acronyms and a glossary of terms to assist the reader.

Chapter 1 sets forth the objectives of the real estate management program and describes the scope, purpose and need for a Real Estate Management Programmatic Environmental Impact Statement. It summarizes the public and internal scoping processes used in identifying issues that in turn form the basis for the development of various alternative planning approaches considered in the PEIS.

Chapter 2 presents alternative approaches to real estate management on Montana's Trust Lands. Five alternatives are proposed including the no-action alternative, which reflects the current real estate program. Each alternative identifies a range of anticipated development that may occur on Trust Lands relative to residential, commercial. All of the alternatives provide for conservation opportunities.

Chapters 3 presents the description of the effected human environment. This includes a description of the existing program of the REMB and the general physical and biological features of Trust Lands.

Chapter 4 provides a description of the predicted impacts on that environment for each of the proposed alternative actions. These predictions include the direct and indirect impacts, cumulative effects, residual adverse affects, irretrievable and irreversible commitments of resources and short term versus long term productivity.

Chapter 5 addresses Categorical Exclusions (CE's), which are types of actions that normally do not have the potential to cause significant environmental effects..

Preface

While serving as Governor of Virginia, Thomas Jefferson drafted the Bill for the General Diffusion of Knowledge, which stated, "...those persons whom nature hath endowed with genius and virtue should be rendered by liberal education worthy to receive, and able to guard the sacred deposit of the rights and liberties of their fellow citizens, and that they should be called to that charge without regard to wealth, birth, or other accidental condition or circumstance...." The U.S. Congress, following Thomas Jefferson's vision for a publicly-educated society, which was deemed necessary for a republican form of government, established the policy of granting land for the support of schools in new states with the General Land Ordinance of 1785. Land grants to states originally only included section 16 within each township, but were later expanded to sections 16 and 36 in 1848, and sections 2, 16, 32, and 36 in 1896. Additionally, some states were granted lands "in lieu of" sections 16 or 36 when those sections were already occupied or privately owned. The Enabling Act of 1889, under which Washington, North Dakota, South Dakota, and Montana were admitted to the Union, states, "That upon admission of each of said states into the Union, sections numbered sixteen and thirty-six in every township of said proposed states ...are hereby granted to said states for the *support of common schools....*"

When Montana became a state through the Enabling Act, the U.S. Congress granted to the State of Montana sections sixteen and thirty-six in every township within the state for common school support. Some of these sections had been homesteaded, some were within the boundaries of Indian reservations, and yet others were otherwise disposed of prior to the passage of the Enabling Act. To make up for the loss and in lieu thereof, other land was selected by the state. In addition to the common school grant, the Enabling Act and subsequent acts granted acreage for other education and state institutions. The Constitution of the State of Montana states in Article X that "All lands of the state ...granted by congress ...shall be *public lands of the state*. They shall be *held in trust for the people* ...for the respective purposes for which they have been or may be granted." Section 4 of Article 10 establishes the Board of Land Commissioners (Land Board) to oversee the management of Trust Land (MCA 77-1, Part 2). The Land Board consists of the statewide elected officials: Governor, Attorney General, Auditor, Secretary of State, and Superintendent of Public Instruction.

The original common school grant totaled 5,188,000 acres. The additional acreage provided for other endowed institutions included 668,720 acres, for a total of 5,856,720. These acreage figures have fluctuated throughout the years due to land sales and acquisitions. Surface acreage in Fiscal Year (FY) 2003 totals approximately 5.2 million acres. The Enabling Act provided that the proceeds from the sale and management of any Trust Land constitute permanent funds for the support and maintenance of the public schools and various state institutions. Rentals received on leased land, interest earned on the permanent fund, and all other income is distributed annually to the schools and institutions.

In the state of Montana, Trust Lands are managed by the Trust Land Management Division (TMLD) of the Montana Department of Natural Resources and Conservation. The mission of the TMLD is to "manage the State of Montana's Trust Land resources to produce revenues for the Trust beneficiaries while considering environmental factors and protecting the future income-generating capacity of the land." Both the Enabling Act and Montana

Constitution require compensation at "full market value" for disposition of Trust Lands. The Division manages these lands through a variety of mechanisms including leases for grazing, agriculture, mineral development, oil and gas development, timber harvest, and "other uses". Other uses include lands used for residential, commercial, industrial and conservation purposes. Approximately 90 percent of the Trust Land surface ownership is dedicated to the Common Schools (K-12), with the remaining 10% shared by nine other trust beneficiaries. Revenue generated from land management activities and interest earned from the Permanent Fund and distributed to the Common Schools totaled \$43.6 million, representing about 10 percent of the FY 2003 state-funded school budget.

Within the Trust Land Management Division, the Real Estate Management Bureau (REMB) is responsible for residential, commercial, industrial and conservation uses on Trust Lands. The REMB is also responsible for the management of secondary uses (licenses) on agricultural, timber and grazing lands and for transactions involving land exchanges, land sales, and land acquisitions.

Applicable Regulatory Requirements

The REMB program is subject to a vast array of laws and rules at the federal, state, and local levels. The purpose of this section is not to be encyclopedic by describing all possible law scenarios but, instead, to highlight the major category of laws that would apply to real estate actions. In a general sense, the real estate management program would operate in the same legal context as the private sector with additional compliance to MEPA.

Federal Laws – Most of the applicable federal laws have state laws as counterparts, including laws related to air and water quality. Another category of federal law with some applicability to Trust Lands would be the Federal Endangered Species Act. The State Forest Management Plan (SFLMP 1996) has previously summarized these and other laws.

State laws – Title 75 of the Montana Code Annotated is a compilation of the laws that have applicability to environmental protection. Other land resource laws, including planning, zoning, and subdivision laws, are included in Title 76 of the Montana Code. Laws specific to state-owned lands are included in Title 77 of the Montana Code. Local governments, such as counties and cities, implement state laws through local ordinances and are the principal entities that regulate local land use proposals through regulations related to growth policies, zoning, subdivision review, and extension of utility services. Programmatic review under the Montana Environmental Policy Act is guided by 36.2.537, Administrative Rules of Montana.

- Trust Land Development Authority - As a statement of policy under Montana law: "It is in the best interest and to the great advantage of the state of Montana to seek the highest development of state-owned lands in order that they might be placed to their highest and best use and thereby derive greater revenue for the support of the common schools, the university system, and other institutions benefiting therefrom, and that in so doing the economy of the local community as well as the state is benefited as a result of such development" (77-1-601,MCA).

- Montana Environmental Policy Act (MEPA) Analysis – In most situations, a MEPA analysis (75-1-101 et seq) is required whenever DNRC is proposing to issue a sale, exchange, right-of-way, easement, placement of improvement, lease, license, or permit or is acting in response to an application for authorization for such a proposal (77-1-121, MCA). As applicable to land use proposals, in particular, the MEPA analysis would begin following local review of the proposal and prior to final approval and authorization by DNRC. Local governments consider multiple environmental factors when developing land use regulations or reviewing land use proposals. Many of the public involvement and environmental review processes common to local government review are similar to those required under MEPA. Under all alternatives of this EIS, it is assumed that DNRC would follow local land use regulatory processes. By so doing, local governments become the initial decision-maker on most project proposals on Trust Lands. The local land use review processes would evaluate projects in relationship to uses, local policies, and environmental suitability. MEPA analysis would benefit from tiering to the local review process.

Local Land Use Policies and Regulations – Growth in the private sector is largely regulated by local land use regulatory processes that reflect local community values, design guidelines, and infrastructure capacities. Growth of commercial, industrial, and residential uses on Trust Lands would be subject to local review as applicable. Local government processes may include:

- Developing or amending growth plans;
- Participating in or initiating zoning and/or subdivision review;
- Pursuing annexation and development agreements; and,
- Participating in other processes where there is the possibility of increasing revenue for the trust beneficiaries.
- Projects proposed on state Trust Lands would be reviewed in accordance to all applicable regulatory processes. The appropriate MEPA analysis would follow the local land use approval process or prior to issuance by DNRC of any land use authority.

Administrative Framework

The management of Trust Lands for the benefit of Montana's schools is the responsibility of the Montana Department of Natural Resources and Conservation under the general authority of the Board of Land Commissioners.

- The Board of Land Commissioners –The Board of Land Commissioners has general authority, direction, and control over the management, and disposition of state lands...(77-1-202,MCA). This includes the authorization to lease Trust Lands for uses other than agriculture, grazing, timber harvest, or mineral production...or sell, exchange, or lease lands.... when, in the Board's judgment, it is advantageous to the state to do so in the highest orderly development and management of state Trust Land (77-1-204, MCA).

- DNRC – The management agency for Montana's Trust Lands is the Trust Land Management Division (TMLD or Division) of the DNRC. The TMLD was established in June 30th, 1995 through a legislative reorganization of Montana's natural resource agencies. The Division was further divided into four management bureaus – Agricultural and Grazing, Forest, Minerals, and Special Uses. The Special Uses Management Bureau, established in 1996, addressed those land uses on state Trust Lands classified as "other". In 2004, the Special Uses Management Bureau became the Real Estate Management Bureau (REMB). The role of the REMB within the Division is to seek revenue opportunities on lands that are principally valuable for uses other than grazing, crop production, timber production, or watershed protection. By authority of statute and rules, the TMLD generates revenue from commercial, conservation, industrial, and residential uses by land use authorizations using leases and licenses and through property transactions involving sales, exchanges, and easements. Commercial leasing of state land is specifically provided by 77-1-901 et seq. MCA. Other laws/rules establish specific processes for each of these land use authorizations, such as easements (77-2-101, MCA), exchanges (77-2-201, MCA), sales (77-2-301, MCA). The TMLD manages approximately 5.2 million acres of surface land in addition to more than 6 million acres of sub surface rights. Four bureaus coordinate activities to manage a portfolio consisting of income from (1) grazing, (2) agriculture, (3) minerals, and (4) real estate. The Real Estate Management Bureau would follow guidance offered by the plan selected through this EIS process. The Agriculture and Grazing Bureau and Minerals Bureau are guided by administrative rules. The Forest Management Bureau is guided by the rules adopted from the State Forest Land Management Plan (SFLMP). Other relevant documents to the real estate program include local government land use policies and regulations.
- Judicial Rulings – There are numerous judicial rulings that help to clarify the intent and purpose of Trust Lands. Notable cases include:
 - *Toomey v. State Board of Land Com'rs* (1938), 106 Mont. 547, 559, 81 P.2d 407, 414; *State v. Stewart* (1913), 48 Mont. 347, 349, 137 P. 854, 855. The Montana Supreme Court has declared that:

The state board of land commissioners, as the instrumentality created to administer that trust, is bound, upon principles that are elementary, to so administer it as to secure the largest measure of legitimate advantage to the beneficiary of it." *Stewart*, 48 Mont. at 349-50, 137 P. at 855. The State Board of Land Commissioners (hereafter, the Board) "owe[s] a higher duty to the public than does an ordinary businessman.

- *State v. Babcock* (1966), 147 Mont. 46, 54, 409 P.2d 808, 812. As a trust, the management of State trust lands is subject to several common law fiduciary trust duties. One fiduciary duty is to make trust property productive. See "Restatement of Law, Trusts 2nd" at §181 at p. 391: "A

trustee of land is normally under a duty to lease it or to manage it so that it will produce income". This general trust duty is further reflected in the provisions of numerous state statutes applicable to the management of state trust lands. See, Sections 77-1-202; 77-1-204(2); 77-1-209; 77-1-216; 77-1-601; and 77-5-116, MCA. Consequently, it is improper to consider a program alternative that conflicts with the State's fundamental fiduciary duty to prudently produce a constant stream of revenue from trust assets.

Chapter 1

Purpose and Need for the Proposed Action

Introduction and Purpose of the Chapter

The Trust Land Management Division (the Division) of the Montana Department of Natural Resources and Conservation (DNRC or the Department) has developed a Draft Programmatic Environmental Impact Statement (DPEIS or DEIS) to analyze and disclose impacts, and compare alternative management strategies of the real estate on state trust lands. The preferred alternative from the DPEIS will become the Real Estate Management Plan (Plan). The Plan will provide the Division's Real Estate Management Bureau (REMB) with consistent policy, direction and guidance in its management of real estate activities on the state's 5.2 million acres of Trust Lands. The Division is divided into four bureaus: Forest Management, Mineral Management, Agriculture and Grazing Management, and Real Estate Management. The Agriculture and Grazing Bureau and Minerals Bureau are guided by administrative rules. The Forest Management Bureau is guided by the rules adopted from the State Forest Land Management Plan (SFLMP). This Plan will only address management activities of the REMB.

Chapter One of this Draft Programmatic Environmental Impact Statement (PEIS) describes the scope, purpose and need for the Real Estate Management Plan. It sets forth the objectives of the Plan as well as the associated issues that in turn form the basis for decision making and for the development of various alternative planning approaches presented in Chapter 2 of the Draft PEIS.

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1.1 PURPOSE OF THE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (PEIS)

The purpose of this PEIS is to identify and evaluate alternative strategies for performing the program responsibilities of the Real Estate Management Bureau (REMB) of the Trust Land Management Division (TLMD or Division) of the Montana Department of Natural Resources and Conservation (DNRC). The Bureau is charged with the management of commercial, conservation, industrial and residential uses on Trust Lands for the benefit of the public schools, Kindergarten through 12th grade and the Montana University system. A preferred alternative will be selected through the Environmental Impact Statement process of the Montana Environmental Policy Act (MEPA) and the selected alternative will become the Trust Lands Management Plan, the guiding framework for decisions related to the management and use of these lands. In keeping with this purpose, essential components of this PEIS are to:

- Identify the roles, duties, and purpose of the REMB.
- Identify a systematic process for proposing and evaluating land use proposals on school trust lands;
- Evaluate the social, economic, and environmental effects of alternative plan philosophies; and
- Select a preferred plan to guide the decisions of the REMB.

1.1.1 Who Has Initiated this Process?

The DNRC has initiated the PEIS process in order to select a “plan” to clarify the future management philosophy of the REMB and to provide a framework for future decision-making. The REMB is one of four Bureaus within the Division, which is guided by a mission and fiduciary responsibility to generate revenue on behalf of the beneficiaries of the Trust Lands including public schools, K-12th grade and the state’s universities. This is accomplished through the management of almost 5.2 million surface acres (plus subsurface rights) of Trust Lands granted to the State of Montana at statehood by the federal government. More particularly, the REMB is responsible for generating revenue from real estate activities on Trust Lands related to commercial, conservation, industrial, and residential land uses.

1.1.2 What is the Proposed Action?

The Division intends to develop a programmatic Real Estate Management Plan (Plan) that will enable the REMB to implement consistent policy, direction and guidance in its management of real estate activities on Trust Lands. It will provide the general philosophy and approach to real estate management, which will in turn serve as the framework for project-level decision making. Individual activities of the REMB will be subject to the provisions set forth in the Montana Environmental Policy Act (MEPA). As provided for under MEPA, this DPEIS also includes a list of types of actions that would qualify for categorical exclusion from the preparation of an Environmental Assessment or Environmental Impact Statement under the proposed Plan, unless extraordinary circumstances occur.

1.1.3 To What Areas will the Plan Apply ?

The Real Estate Management Plan will be used in the management of the entire surface holdings of the Division, approximately 5.2 million acres statewide. The lands are, and will continue to be managed by six land offices, geographically distributed across the state.

1.1.4 What will the Plan not Address?

It will not determine any specific real estate program or project. It will not address site-specific issue nor will it make specific land use allocations.

1.1.5 What Time Period will be Addressed by the Plan?

The selected Real Estate Management Plan will apply through the year 2025. However, the Plan will contain provisions for updates and revisions over time to reflect changing conditions.

1.2 NEED FOR THE ACTION

The REMB manages programs and processes for the issuance of leases, licenses, and easements, the exchange of Trust Lands for private and federal lands, and the sales and purchases of Trust Lands. The REMB is facing critical challenges in fulfilling these land management responsibilities. In particular, these challenges can be expressed in the following two problem statements:

- The face of Montana is changing. While certain areas of the state are enduring economic decline, other are experiencing rapid growth. For those State Trust Lands that are located in areas of high growth, opportunities exist to garner greater income on behalf of the Trust Land beneficiaries. To ignore these opportunities would be contrary to the TMLD's mandate and fiduciary responsibilities to produce revenue for the school trusts.
- As a newly created Bureau, the REMB is currently without clear policies and guidelines for decision-making. Residential, commercial, industrial and conservation activities on Trust Lands have occurred under a process that has evolved since the inception of the Bureau (1996) and the addition of planning staff to the Land Offices. In recent years, most development opportunities on Trust Lands has been focused in urban locations.

1.3 THE OPPORTUNITIES

1.3.1 The School Funding Opportunity

In recent years, the people of the State of Montana have become increasingly concerned about the level of funding for public education. This concern came to light in a recent Montana District Court decision (April, 2004), that found Montana is violating its own Constitution by failing to adequately fund public education and must have a new financing plan in place by October of 2005. Although the final disposition of the case is not clear, the contribution that Trust Lands can make to the

school funding base, will become increasingly important as the state struggles with finding sources of revenue to address school funding needs.

1.3.2 The Economic Opportunity

The Montana economy is becoming increasingly dependent on non-resource based industries. According the U.S. Bureau of Economic Analysis, the largest industries in Montana in 2001 were services, constituting 27.7 percent of earnings; state and local government, 14.9 percent; and retail trade, 11.3 percent. Of the industries that accounted for at least 5 percent of earnings in 2001, the slowest growing from 2000 to 2001 was federal civilian government (5.7 percent of earnings in 2001), which increased 0.6 percent; the fastest was state and local government, which increased 11.0 percent (Regional Economic Information System, Bureau of Economic Analysis, April 2003).

Grazing lands comprise almost 80 percent of the total surface acres managed by the TLMD. Agricultural (farming) land comprises about 11 percent of the total surface acres, forested acres comprise about 9 percent of the total land base, with other uses (cabin sites, residential housing, commercial and industrial leases, and conservation) comprising less than one percent of the land base. While the greatest amount of revenue generated from Montana's Trust Lands is from agriculture and grazing, the net return per acre on grazing lands is the lowest. Conversely, while less than one percent of the land base is in classified "other" uses, the return per acre is the highest. Table 1-1 summarizes the net revenue per acre for each of the various surface uses.

Table 1-1. Trust Land Net Revenue per Surface Acre for 2003			
Bureau	Acres Managed	2003 Revenue	Net Revenue Per Acre
Grazing	4,062,911	\$5,036,377	\$1.25
Agriculture	569,657	\$8,036,597	\$14.00
Forest	480,368	\$3,138,699	\$6.53
Other (Real Estate)	22,071	\$1,206,388	\$54.83
TOTAL	*5,161,513	\$17,418,061	\$3.37

*Rounding errors affect Total

Trust lands that are in close proximity to areas of high growth are well positioned to take advantage of opportunities in the commercial service and residential sectors of the economy.

1.4 OBJECTIVES

The Division used the following objectives to develop this plan. These objectives were used throughout the programmatic Draft PEIS process to design alternatives, to eliminate unreasonable alternatives, and will be used to select a preferred alternative.

- Generate increased revenue for trust beneficiaries greater than current levels

- Comply with the Montana Environmental Policy Act (MEPA) requirements for developing a programmatic plan, DNRC's administrative procedures regarding MEPA (ARM 36.2 et. Seq.) and the Montana Antiquities Act (MCA 22-3-424), in their most current form
- Provide a more effective and efficient decision-making framework for real estate management that includes a strategic vision and philosophy for future management.
- Simplify the project level evaluation process
- Protect the long-term viability of Trust Land for uses other than agriculture, grazing and timber.
- Provide an opportunity for public involvement in decisions affecting residential, commercial, industrial and conservation uses
- Develop ways to work more closely with local government processes and policies.

1.5 THE PUBLIC INVOLVEMENT PROCESS

A PEIS (Programmatic Environmental Impact Statement) planning team, consisting of staff members of the TLMD prepared an Initial Proposal for the scoping process (see the List of Preparers). The Initial Proposal described the purpose and need for the PEIS and listed issues for possible consideration. This document also described our current processes and two initial alternatives – the no-action or status quo alternative and a proposed alternative.

1.5.1 Public Scoping and Involvement

During the development of the initial proposal, the Division compiled several mailing lists, including a general mailing list of persons, agencies and interest groups who commented on previous DNRC statewide issues, a mailing list of the fifty-six (56) Montana County Commissioners, Montana planning offices, Montana Association of Planners (MAP), county and district school superintendents and the Land Board and Land Board staff. These initial mailing lists totaled approximately one thousand (1,000) entries. The Division mailed a newsletter announcing the availability of the initial proposal to everyone on this mailing list in January, 2001, including a return addressed request form to mail if they wanted to receive a copy of the initial proposal. The TLMD also published display ads in Montana newspapers (the Montana group), and an electronic version was also posted on the DNRC website. Information from the public and internal scoping processes is included in Appendix A.

The Division opened the public comment period for the initial proposal on Monday, January 8, 2001. The public comment period lasted 109 days and closed on Friday, April 27, 2001. The TLMD also held the several public scoping meetings to present the Initial Proposal and ask for public comment. Press releases were issued the week prior to the meetings. The meetings consisted of a one-half hour PowerPoint® presentation, followed by a question and answer session. Comments were not recorded at these meetings; attendees were asked to submit their comments in writing so we would be sure to consider them in the preparation of the draft programmatic EIS. These public scoping meetings were held at the following locations and dates:

Table 1-2. Public Scoping	
DATE	LOCATION
5 March 2001	Billings
6 March 2001	Miles City
7 March 2001	Lewistown
8 March 2001	Bozeman
27 March 2001	Kalispell
28 March 2001	Missoula
29 March 2001	Helena
19 April 2001	Great Falls

The same PowerPoint© presentation was provided to the Land Board in Helena on April 16, 2001. As a result of the newsletter, 161 persons requested copies of the 65-page Initial Proposal by mail, phone, fax, or e-mail. Comments on the Initial Proposal were received from 83 persons. A total of 65 persons attended the public scoping meetings. All comments received were from within the state of Montana, except for one from Racine, Wisconsin. Responses came from the following counties: Cascade (10), Flathead (16), Gallatin (4), Jefferson (1), Lake (5), Lewis and Clark (7), Madison (3), Meagher (1), Missoula (16), Phillips (1), Ravalli (6), Sanders (2), Silver Bow (4), Stillwater (1), Teton (1), Yellowstone (5). The EIS planning team then carefully reviewed all comments and grouped them into relevant major issue categories. We used these issue categories to develop the alternatives described in the following sections of this draft PEIS.

A follow-up newsletter was sent to a mailing list of 600 individuals/agencies in February 2004 to inform the interested public of progress being made towards preparation of the Draft Environmental Impact Statement. The newsletter included a timeline for completing the EIS process and general assumptions for identifying alternative plan scenarios.

1.5.2 Internal Scoping

The REMB is integrated with three other bureaus within the TLMD. This plan could affect the existing operation of the Real Estate Bureau and its relationship to the other bureaus. This would be particularly evident related to the common objective to generate revenue to the school trusts and how assets (financial and personnel) would be affected by changing priorities and portfolio objectives. The TLMD staff was offered an opportunity to identify issues related to the development of the PEIS in a session conducted for that purpose in October 2003. An additional opportunity for comment by TLMD personnel was offered in the spring of 2004 prior to the release of the DEIS.

(The Draft PEIS and Final PEIS Processes will be added later.)

1.5.3 Issues Identified

Based on comments received and on prior experience with the administration of the Real Estate Management Bureau, the DNRC staff identified the following issues for evaluation in this PEIS:

- In order to meet its fiduciary responsibilities to the beneficiaries, the DNRC must increase revenue associated with the management of commercial, industrial, residential and conservation uses on Trust Lands.
- The REMB is managing land uses in a reactive manner without the benefit of well-defined planning process or decision making framework.
- The REMB currently lacks a methodology for determining the suitability of land for the development of the various uses under its jurisdiction.
- A successful real estate program will rely on a close association with local land use planning and regulatory processes.
- The relationship of the statutory requirements under MEPA to the selection and development of projects on Trust Lands is unclear.
- There is a need to identify opportunities for Categorical Exclusions (CE's), as provided under MEPA, consistent with the purpose for development of a programmatic plan (ARM 36.2.522(5))
- The REMB requires guidance in addressing the growth inducing impacts of development of commercial, residential and industrial uses on Trust Land
- The REMB requires guidance in addressing the impacts of growth with respect to transportation, air quality, noise, and other environmental concerns.
- The REMB requires guidance in addressing open space and wildlife habitat needs while providing income for trust beneficiaries.

1.5.4 Issues Eliminated from Detailed Study

The Division staff eliminated some issues from detailed study because they are outside the scope of the plan. Other issues were eliminated because other statutes, administrative rules, plans, or policies address them, or they are legally constrained. The explanation for the elimination of these issues from detailed study are listed below:

- The plan would not address all management activities occurring on Trust Land, such as agricultural or grazing leases, mineral leases, timber management activities, or other uses, including issuance of utility or driveway easements, general recreation licenses, and miscellaneous permits. These activities are addressed by other statutes, administrative rules, plans, and policies, and are outside the scope of the plan.
- Alternatives considered must be within the authority of the DNRC to implement. The plan would not evaluate alternatives that require changes in the

Enabling Act or Montana Constitution. Such changes are beyond the authority of DNRC to implement and therefore beyond the scope of the plan.

- The plan would not address site-specific uses or activity locations. Rather, it would contain the general management philosophy that guides project-level decisions.
- The plan would not consider several types of actions as specified in ARM 36.2.523(5), such as administrative actions, routine or clerical activities, minor repairs, operations or maintenance of existing equipment or facilities, investigation, enforcement and data collection, ministerial actions, etc.
- The plan would not address the general recreational use program, as described in MCA 77-1-801 et. seq. and ARM 36.25.143 – 167.
- The process to reclassify Trust Land, as described in MCA 77-1-401 – 404, would not be addressed by the plan.

Issues identified by the public that were related to the above were also eliminated from detailed study and not analyzed further.

1.6 THE DECISION THAT MUST BE MADE

The decision to be made is to select the alternative to become the Real Estate management Plan that best satisfies the needs and objectives described in Sections 1.2 and 1.3. The Director of DNRC is the decision-maker for this programmatic plan. The Director will evaluate the alternatives to determine which alternative generated from the programmatic EIS process best meets the Division's mission statement and objectives of the plan. This decision must include (ARM 36.2.538(1)): what the preferred alternative is, why the Director has chosen this alternative, and any changes to the alternative as it was drafted. The Director will make his recommendation to the Board of Land Commissioners for their final approval.

Chapter 2

Real Estate Management Plan Alternatives

Introduction and Purpose of the Chapter

Chapter 2 presents alternative approaches to real estate management on Montana's Trust Lands. The selected alternative will become the Real Estate Management Plan for the Division. Five alternatives are proposed including the no-action alternative, which reflects the existing or status quo program of the REMB. Information presented includes a comparative analysis of the alternatives and a summary of the anticipated effects. The alternatives have been developed in response to and are driven by the issues raised by the public and the DNRC staff. Chapter 2 includes a summary of how the issues are reflected in each of the alternatives.

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2.1 INTRODUCTION

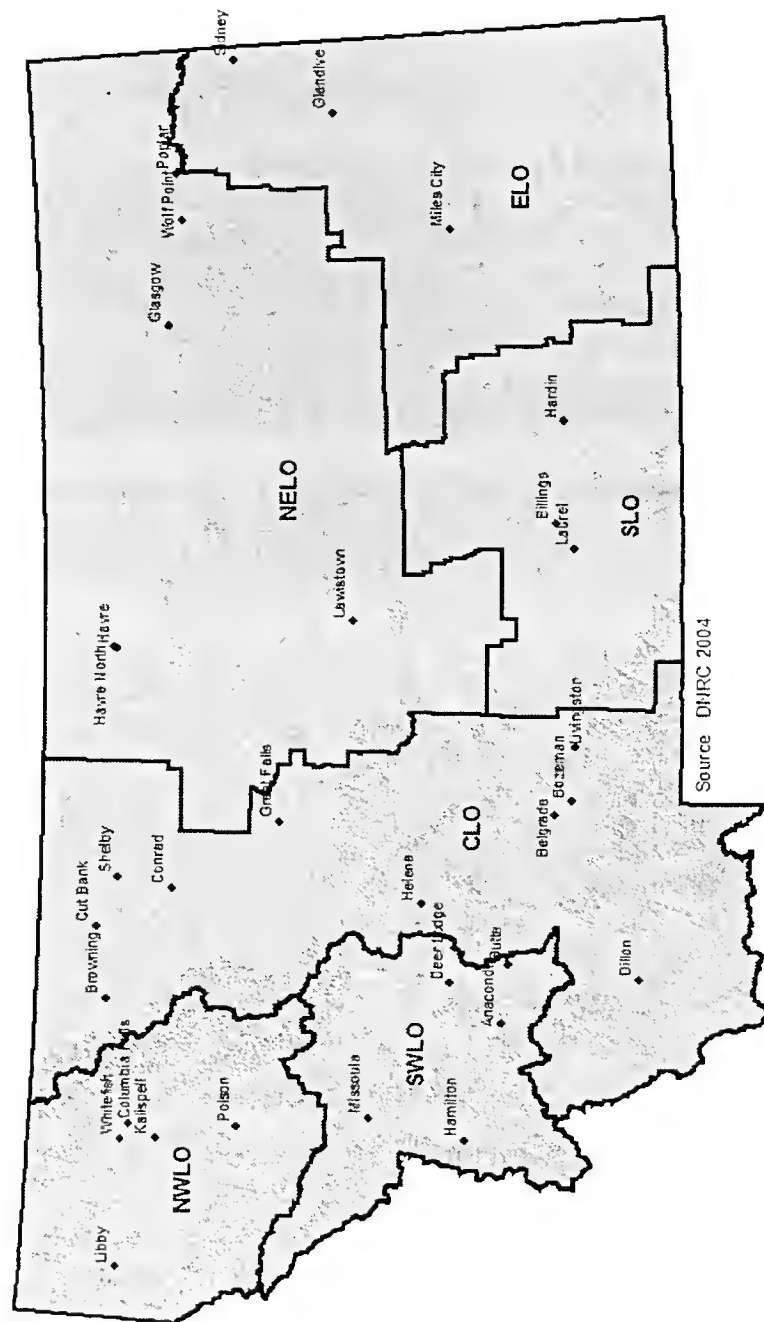
This chapter describes five alternative philosophic, strategic approaches to the management of real estate activities on trust lands by the REMB of the TLMD of DNRC. The analysis focuses on land use activities related to residential, commercial, industrial, and conservation uses. The underlying premise of each alternative is that growth (increased demand of residential, commercial, and industrial uses) on Trust Lands would correspond in varying degrees to anticipated growth in each of the six DNRC land office regions of the state (See Figure 2-1). Conservation opportunities on Trust Lands would be encouraged under all alternatives.

2.1.1 Explanation of Funnel Filtration Process

A decision-making framework, referred to as a funnel filtration process, provides a systematic approach to identify project level opportunities. This funnel filter approach begins with a physical environment filter followed by a transitional filter and a market filter that combine to generally define lands that might have some potential for future project opportunities. Five project level filters follow these three initial landscape filters. Key elements of the project-level filters include use of local land use review processes for impact analysis and mitigation and appropriate MEPA compliance. This plan is intended to offer guidance to the REMB through the year 2025. Each alternative has varying degrees of accomplishing the necessary specific objectives outlined in Chapter 1, Section 1.3.

Figure 2-1. DNRC Administrative Land Office Regions

DNRC Administrative Land Office Regions



2.2 HISTORY AND PROCESS USED TO FORMULATE THE ALTERNATIVES

The range of alternatives presented in this chapter were developed from the objectives and relevant issues identified in the Initial Proposal of the MEPA scoping process, conducted between January 19th and May 27th, 2001. Internal scoping from DNRC staff was accomplished in the fall of 2003. A summary of comments received, that in turn provided the basis for the issues, is included in Appendix A.

2.3 ALTERNATIVE DESIGN, EVALUATION AND SELECTION CRITERIA

The design of the alternatives is based on four critical assumptions:

- The alternatives must correlate to the stated objectives of the Draft PEIS and be responsive to the relevant issues.
- The existing Real Estate Management program constitutes the base line from which comparisons of alternatives are made.
- Growth (residential, commercial, industrial) on Trust Lands would correspond in varying degrees to anticipated growth within each of the six DNRC land office regions of the state.
- Each alternative would incorporate conservation opportunities.

Assumptions were necessary to fully describe how the existing program (No Action) and the four action alternatives would move forward into the future. The fundamental comparisons between alternatives primarily pertain to "management philosophies" or "response strategies" to projected estimates of growth. The basic three measures of comparing alternatives are: 1) quantity of acres of newly developed or conservation uses and 2) how those uses on Trust Lands would affect the natural and social environment and 3) the revenue return to the beneficiaries.

The following narrative identifies the fundamental components or baseline assumptions of each alternative so comparisons between alternatives can be narrowed to only those management strategies capable of achieving the respective land use projections of each alternative. All alternatives share a fundamental decision-making process but it is assumed that the no-action alternative is less structured than the action alternatives. Distinctions between the management elements of the existing program to the action alternatives are identified as appropriate and relevant.

2.3.1 Technical Alternative Design Elements

Each alternative can be described and evaluated relative to the existing program of the REMB. Alternative A (No Action or Status Quo) would maintain the existing program into the future. Alternatives B, B-1, C, and C-1 are compared to this baseline. Under the existing program, DNRC employs a number of real estate tools to achieve desired outcomes. The application of these tools would differ between alternatives.

The following management considerations (or elements) will be addressed by each alternative to provide comparative analysis:

- Relationship to Community Growth
- Land Use Categories
- Location Descriptors
- Project Selection and Prioritization (Relationship to the Funnel Process)
- Implementation Strategies
- Project Management Roles
- Administration
- Financial Considerations
- Environmental Review and Public Involvement

The following is a description of each of the management considerations to be addressed.

2.3.1.4 Relationship to Community Growth

A second tier of baseline comparisons shows how each alternative relates to community growth. An assumption is made that Trust Lands would share to some degree, in anticipated community growth. Trust Lands in Alternative B and B-1 would share proportionally to predicted community (regional) growth. Growth on Trust Lands in Alternative C and C-1 would constitute a proportionally higher share of the anticipated regional growth. Under Alternative A, the REMB would continue to pursue revenue opportunities for all land use types but the share of development on Trust Lands would be less than proportional to market conditions.

The acres of “new” growth presented in the DEIS are not targets. Rather, they are estimates of new growth used for the purpose of drawing comparisons among the alternatives. The actual opportunities for sharing in the market on Trust Lands would be realized through filtration methodology and project identification processes, which will help determine the suitability of development.

- Regional Growth Indices – Population and income projections serve as reliable indicators for the location and scale of future development potential. Polzin (2004) describes economic trend analyses for each land office region and is the basis for identifying future growth potential by land office (See Appendix B). By 2025, it is estimated that approximately 1.16 million people will live in Montana. The fastest growing region of the state will be northwest Montana (Whitefish, Kalispell, Bigfork, Polson Libby, Plains) followed by southwest Montana (Missoula, Hamilton, Anaconda, Lincoln), central Montana (Shelby, Great Falls, Helena, Bozeman, Dillon), and southern Montana (Billings, Red Lodge, Big Timber). Refer to the population and growth estimates presented in Chapter 4 (Table 4-1)

- State Ownership Mix – Trust Lands represent a percentage ownership of all lands in the state of Montana. This ownership relationship is shown in Table 2-1.

Trust Lands represent approximately 5.5% of the land area in Montana. The land ownership proportions vary by land office as described on the next page in Table 2-2.

Table 2-1. State Land Ownership Mix		
Ownership	Acres	Percentage
Federal	27,192,268	28.9
DNRC Trust Land	5,153,551	5.4
Other Government Land	366,520	0.4
Tribal	5,395,454	5.7
Private	55,071,623	58.6
Water	844,425	0.9
Total	94,023,843	100

Table 2-2. Land Ownership by Land Office

Ownership	NWLO		SWLO		CLO		NELO		SLO		ELO	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Federal	5,691,828	62.7	4,223,416	56.8	7,912,595	34.6	5,456,705	19.0	1,288,960	12.4	2,618,766	16.9
Trust Land	314,396	3.5	233,569	3.1	1,254,486	5.5	2,003,245	7.0	382,115	3.7	965,740	6.2
Other Government	16,940	0.2	160,642	2.2	135,535	0.6	27,400	0.1	10,953	0.1	15,052	0.1
Tribal	620,173	6.8	93,692	1.3	939,384	4.1	1,734,022	6.0	1,765,005	17.0	243,179	1.6
Private	2,187,120	24.1	2,703,027	36.4	12,484,101	54.5	19,188,447	66.7	6,903,489	66.4	11,605,440	75.0
Water	253,913	2.8	16,328	0.2	164,021	0.7	338,154	1.2	41,219	0.4	30,789	0.2
<i>Total</i>	9,084,369		7,430,674		22,890,121		28,747,973		10,391,740		15,478,966	

Each land office region is comprised of multiple ownerships as shown in Table 2-2. A general assumption is that developed uses (residential, commercial, industrial) could normally occur on all categories of land ownership, except for "federal" and "water". All lands would be considered eligible for conservation purposes. The proportion (percentage) of Trust Lands to lands eligible for general development opportunities (total regional acreage less "federal" and "water") is shown in Table 2-3.

Table 2-3 Proportion of Trust Land Eligible for Development by Land Office					
NWLO	SWLO	CLO	NELO	SLO	ELO
10%	7%	8%	9%	4%	8%

The percentages listed in the above table indicate the annual percentage of projected development that could occur on Trust Lands if they shared equal opportunities with other land ownerships. As an example, Trust Lands in the NWLO represent 10% of the total regional acreage (less "federal" and "water") so could be expected to attain 10% of the estimated regional growth of residential, commercial, and industrial uses. These proportion percentages would not apply to conservation strategies since all land ownerships and land categories, including "federal" and "water" could be suitable for conservation purposes.

2.3.1.5 Land Use Categories

The TLMD generates revenue to the trust beneficiaries from five general land use activities – agricultural leasing, grazing leasing, mineral leasing, timber harvesting, and real estate management. The REMB would generate revenue from activities on Trust Lands related to four land use categories. A general description of each of these categories is presented below.

- Residential – The greatest potential for new growth on Trust Lands is "residential". Residential uses include single-family dwellings, duplexes, condominiums, townhouses, cabins, apartments, mobile-home parks, associated ancillary uses, and other residential uses normally recognized by local zoning regulations. The assumptions used to develop the growth and economic models are analogous to the methodology used by the Department of Revenue in that multifamily residential properties are typically classified as commercial for taxation purposes. As such, commercial forecasts included in this PEIS include some components of residential and, for accounting and implementation purposes, residential uses considered as commercial uses by the Department of Revenue would be considered "commercial". "Raw" or undeveloped properties might also be identified for residential potential through a highest and best use analysis. For example, some forested lands may reflect a higher value if appraised as residential land, as compared to their value for timber management purposes. Rural residential forecasts in this PEIS define how much residential development might occur on lot sizes between 1 and 25 acres. No estimates were made for larger residential tracts or for single-family lots less than 1 acre in size but, for accounting purposes, it is assumed that the acreage forecasts for rural residential would include the small lot acreages. It is expected that the value of Trust Land properties having "single family" as the highest and best use would be realized in

most situations, by sale [of the property] as opposed to leasing. Existing leased properties would not be sold in most circumstances.

As noted above, a basic assumption is that Trust Lands would share in expected community growth. In other words, market factors would determine how much of the new growth would occur on Trust Lands versus other lands. In Western Montana, most of the large lot residential growth is expected to occur in rural locations, including forested lands. As residential opportunities are identified for Trust Lands, the REMB could obtain the residential values of the land in a number of ways, including:

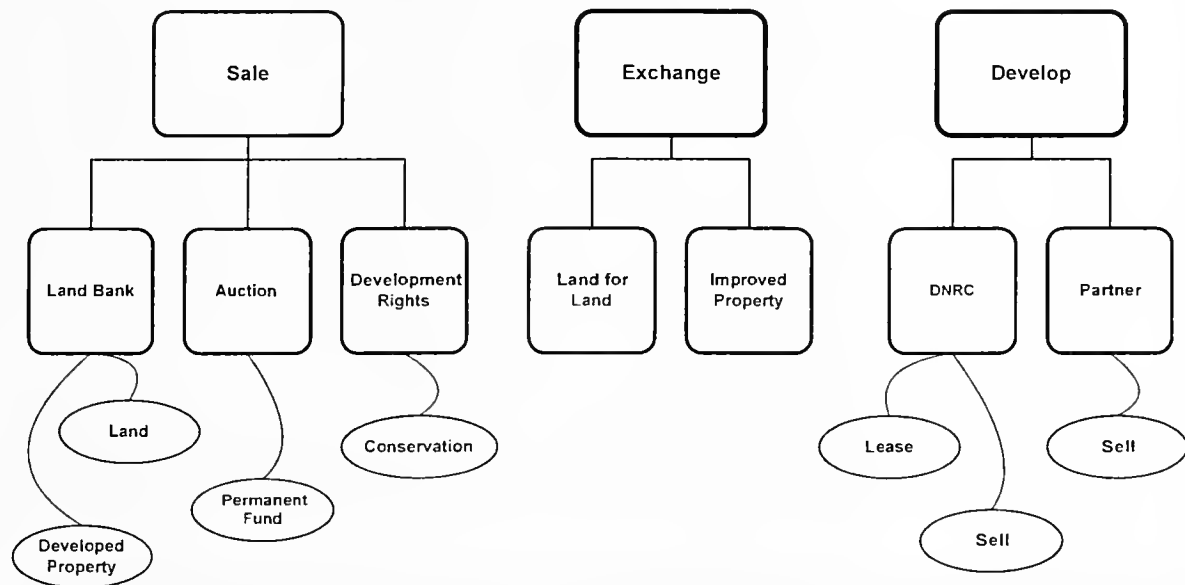
- Land Sales: DNRC would maintain the existing residential lease. Lands identified for projects that have a highest and best use as "residential" could be sold at appraised value or higher with an auction process. Revenue would be placed in the permanent fund.
- Land Banking: This is a land sale where the revenue may be pooled with other sold properties to purchase other desirable income properties for the various trusts.
- Land Exchange: This process would permit an applicant to exchange other lands for Trust Lands with the assumption that the lands DNRC receives in exchange for the Trust Lands are in the better interests of the trust for reasons of income potential, asset management, or other reasons.
- Land Development: This process assumes DNRC would retain some ownership interest in the land as it is being developed for residential purposes. The REMB could either lease lots or sale lots under this scenario and could include partnerships with the private or public entities to accomplish development objectives.
- Transfer Of Development Rights (TDR)*: Land rights associated with a certain parcel, such as land use density, could be transferred to another Trust Land parcel to accomplish a variety of objectives. An example of TDR could include moving development away from a sensitive area (transfer) to an area more suitable for development (receiving area).
- Purchase/Lease of Development Rights (PDR or LDR)*: The REMB could sell the development rights through a lease or license (LDR), or easement (PDR) in lieu of selling, exchanging, or developing the land for residential uses. This strategy would allow the REMB to realize the value of the development rights while maintaining DNRC ownership and historical use of the land.

*The use of TDRs is typically undertaken in the context of local land use planning regulatory processes. However, the sale of development rights (PDR/LDR) could, in most cases, occur outside the scope of local land use regulations.

These methods all assume that the REMB would attain the fair market value of the land on behalf of the beneficiaries of the Trust Lands. The first five options also assume that the land would be developed for residential uses, constituting a portion of the Trust Land share of residential growth in the entire land office area in which it is located. The last option (PDR), however, would have the effect of moving any expected residential development elsewhere in the community. As a result, the particular parcel of Trust

Land would not share in the expected residential growth. In other words, eliminating the development potential on the Trust Lands would do nothing to eliminate the need or demand for additional residential development in the community. The need would simply be met elsewhere. The use of a PDR would help achieve conservation objectives but would not count towards the share of anticipated growth of residential uses (see estimates by alternative) on Trust Lands. The options for attaining value on residential lands are generally depicted in Figure 2-2.

Figure 2-2. Methods of Income Generation on Trust Lands with Residential Value



- **Commercial** – Commercial uses include retail businesses, offices (private and public), service establishments, motels, resort recreation, RV Parks, communication sites, and other similar uses that may be recognized as “commercial” in local zoning regulations. Public buildings, schools, religious structures and developed commercial recreational facilities are also included in the commercial land use category. In addition, “raw” or undeveloped properties might also be identified for their potential commercial use through a highest and best use analysis. Typically, DNRC would retain ownership of its commercial properties (land and/or buildings) and lease them to private entities rather than sell properties. As under residential, the REMB could sell the development rights through a lease, license, or easement (if applicable) in lieu of developing the land for commercial purposes. This strategy (PDR/LDR) would allow DNRC to realize the value of the development rights while maintaining land ownership and historical use of the land. As noted under residential uses, the use of PDRs would have the effect of moving any expected commercial development elsewhere in the community and the specific

parcel of Trust Land would not share in the expected commercial growth. The expected need or demand for commercial development would be met elsewhere. The use of a PDR strategy would help achieve conservation objectives but would not count towards the share of anticipated growth of commercial uses (see estimates by alternative) on Trust Lands. For purpose of tracking growth estimates, it is assumed that the acreage forecasts for commercial would include certain residential uses, such as multi-family, considered as "commercial" by the Department of Revenue.

- **Industrial** – Industrial uses include manufacturing, wholesaling, warehousing, utilities, heavy transportation, sanitary landfills, wind farms, sewage treatment facilities, feedlots, grain storage bins, irrigation facilities, reclamation projects, electrical substations, intermodal shipping facilities, and similar uses. In addition, "raw" or undeveloped properties might also be identified for their potential industrial use through a highest and best use analysis, growth policy or zoning designation, or identified as "High Suitability" in the PEIS. Typically, DNRC would retain ownership of its industrial properties (land and/or buildings) and lease them to private entities rather than sell properties. As under residential and commercial, the development rights could be sold through a lease, license, or easement (if applicable) in lieu of developing the land for industrial purposes. This strategy (PDR) would allow DNRC to realize the value of the development rights while maintaining land ownership and historical use of the land. The use of PDRs would have the effect of moving any expected industrial development elsewhere in the community and the specific parcel of Trust Land would not share in the expected industrial growth. The expected need or demand for industrial development would be met elsewhere. The use of a PDR strategy would help achieve conservation objectives but would not count towards the share of anticipated growth of industrial uses (see estimates by alternative) on Trust Lands.
- **Conservation** – Conservation lands are generally lands for which certain real property rights have been "removed" to maintain long-term rights for open space, preservation of habitat, natural areas, parks, or other such purposes. Conservation objectives can be secured on Trust Lands through the issuance of conservation easements, leases, and licenses. Another method is to sell, lease, or license development rights on Trust lands. Under this method, the development potential on a particular land parcel for residential, commercial, or industrial uses (as determined by a highest and best use analysis) would be purchased to remove these property "rights" and thereby prevent development of these type of uses on the property. The ownership of the land would remain with the "state" and, in most situations, the underlying historical use of the property, such as agriculture, grazing, and forest management, could continue. In all situations, the REMB would seek financial compensation for "lost" rights. An appraisal process would be used to assign a value to the property rights to be purchased through a conservation strategy. Current legislation limits the authority to sell permanent conservation easements on Trust Lands. Legislative authority may also be necessary to sell development rights.

Easements would provide a one-time purchase of certain identified development rights based upon the market value of those rights. Non-permanent options for securing certain rights to Trust Lands would be accomplished by license or lease.

- While there is no known strategy for identifying trend patterns or expected growth rates for conservation easements, leases, or licenses on private and public lands, the REMB has evaluated the potential for the transfer of certain of its lands to conservation use. A GIS process was used to identify the physical relationship of Trust Lands to significant natural features across the state and within land office regions. (This information is presented in Chapter 3.) The assumption is that some Trust Lands in close proximity to other conservation areas might share similar conservation attributes and may, therefore, be suitable for conservation strategies. Existing conservation areas were identified as including the following groups of lands:
 - National Parks
 - National Monuments
 - Wilderness Areas
 - Wild & Scenic Rivers
 - Wildlife Refuges
 - Game Ranges
 - Public/Private Conservation Easements

Trust Lands (acres) were then identified according to whether they were located (1) adjacent; (2) within 0.5 miles; or (3) 1 mile of these land categories. The results are shown in Table 2-4.

Land Office	Adjacent	Within 0.5 Miles	Within 1 Mile
NWLO	22,233	38,502	50,867
SWLO	12,093	26,233	38,968
CLO	72,276	130,831	176,376
NELO	68,689	101,303	134,822
SLO	3,522	12,319	19,957
ELO	10,464	20,947	25,058
Total	189,277	330,136	446,049

These lands may or may not have any particular value for conservation, nor is it known whether these lands have a market for this purpose. However, each plan alternative would consider this as a "pool" of potentially suitable lands for conservation. However, none of the alternatives would specifically limit options to purchase/lease development rights on any Trust Lands.

All of the alternatives presented in this PEIS provide opportunity for conservation uses on Trust Lands through the purchase of development rights. Conservation acreages have been calculated based on the proximity of Trust Lands to existing areas with attributes associated with conservation lands. However, these acreages are projections

only and are not intended to limit the number of conservation uses that may occur on Trust Lands.

There are a variety of reasons for creating or desiring a particular conservation strategy and all might reflect different priorities based upon the particular mission of an agency or special interest group and/or available funding. Many conservation strategies are intended to protect wildlife habitat. However, the REMB recognizes that not all conservation strategies are intended to protect a natural resource per se. In some situations, the purchase of development rights could be proposed to maintain the status quo of an area. Given this understanding, it would be reasonable to conclude that purchase of development rights might be proposed [by others] as an alternative to the potential sale or development of certain Trust Lands.

As indicated in Chapter 3, the TLMD is currently preparing a voluntary Habitat Conservation Plan (HCP) for forest-management activities on Trust Lands. The HCP will address those lands that provide habitat for species currently listed or those that could be listed under the Endangered Species Act (ESA). The HCP offsets harm caused by lawful activities, such as forest management practices, by promoting conservation strategies to minimize or mitigate impacts to threatened and endangered species. The conservation objectives for the HCP process could be achieved in concert with the REMB program for conservation under all five of the proposed alternatives including the current condition (Alternative A).

2.3.1.6 Location Descriptors

Land use activities can be described as occurring in three general locations:

- *Urban* defines a named location (latest state highway map) where a mix of different developed uses occurs in close proximity to each other. All incorporated cities would be included in this category plus unincorporated communities that typically have public water or sewer facilities. Urban would include the customary extraterritorial planning jurisdiction of a city.
- *Suburban* defines a transition area between urban and rural. This would normally define a mostly residential area where land use densities generally range between 1 to 20 acres per dwelling unit.
- *Rural* defines lands not considered to be urban or suburban. These lands are typically distant from developed centers but may have some concentration of residential, commercial, or industrial uses associated with certain amenities or resource ties, such as saw mills in the forest, resorts near a lake, or a ski area on steep slopes.

2.3.1.7 Project Selection & Prioritization

This section describes a programmatic approach to the identification and selection of real estate opportunities on Trust Lands under each of the action alternatives. The approach is a systematic process that offers a filtration methodology for identifying lands that may ultimately be suitable (as determined by subsequent project level analyses) for residential, conservation, commercial and/or industrial purposes. Figure 2-3 represents the initial filtration process. The entire funnel filtration process is depicted in Figure 2-4. All Trust Lands can be "filtered" through a series of eight (8) processes to determine project level opportunities. A Geographical Information System (GIS) analysis was used to generally identify lands that might be unsuitable for development (physical filter)

and to identify lands that may have some level of development potential (transitional lands). The methodology and results of this GIS study (Geodata Services 2004) is presented in Appendix C. A demographic and economic process was used to model projected growth in the six land office regions of the state (Jackson 2004). The methodology and results of that study are presented in Appendix D and represent the "Market" filter of the funnel process. The remaining five filters of the process are project level analyses used to identify and select appropriate development opportunities. The REMB would use an ID (Identification) Team approach to develop one, 3, and 5 year project lists (Figure 2-5). Under the existing program of the REMB, the project selection and prioritization methodology is less structured. Project opportunities are more often reactive than proactive and project priorities are identified from annual meetings of a Commercial Development Working Group.

Figure 2-3. Initial Steps to Funnel Filter Process

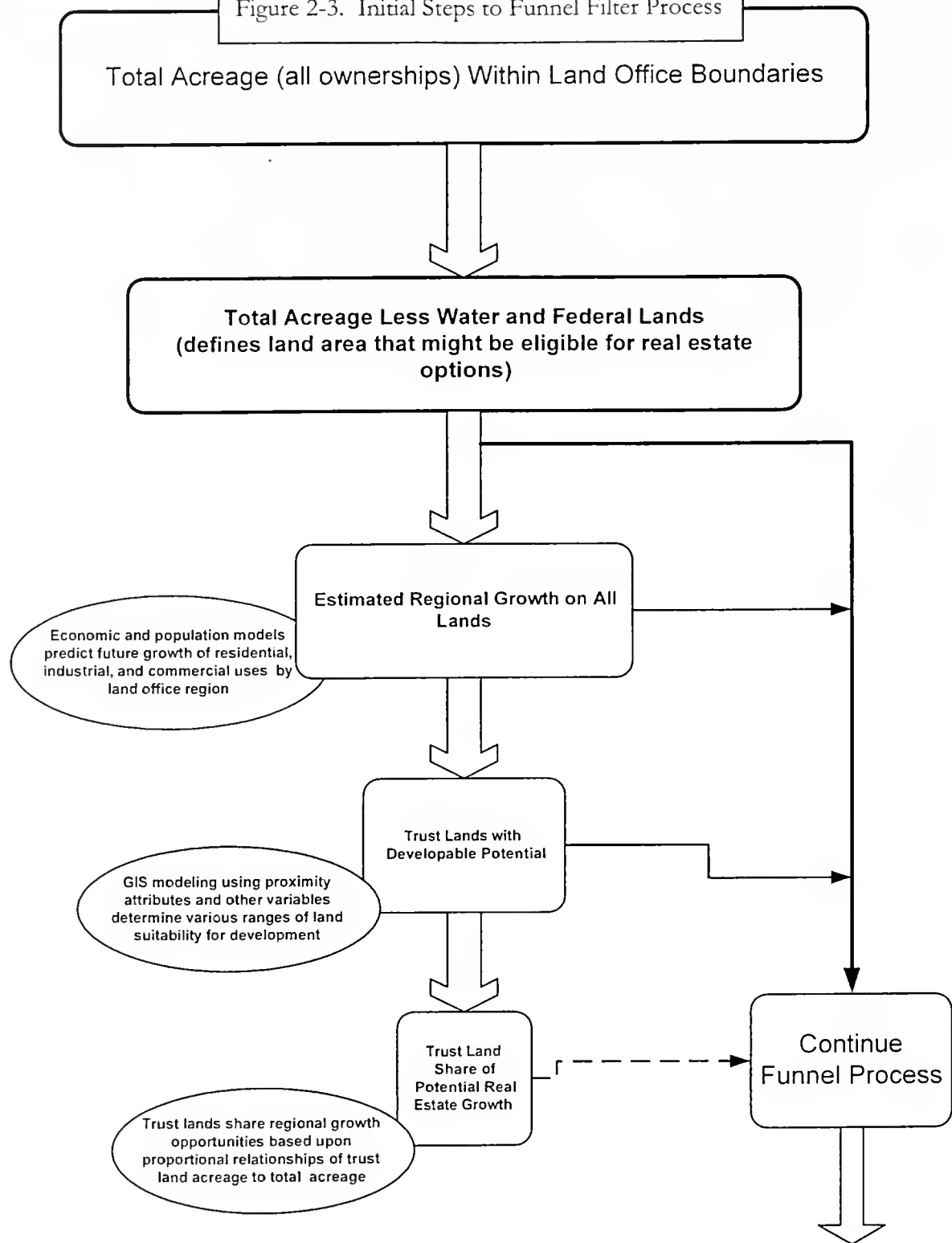
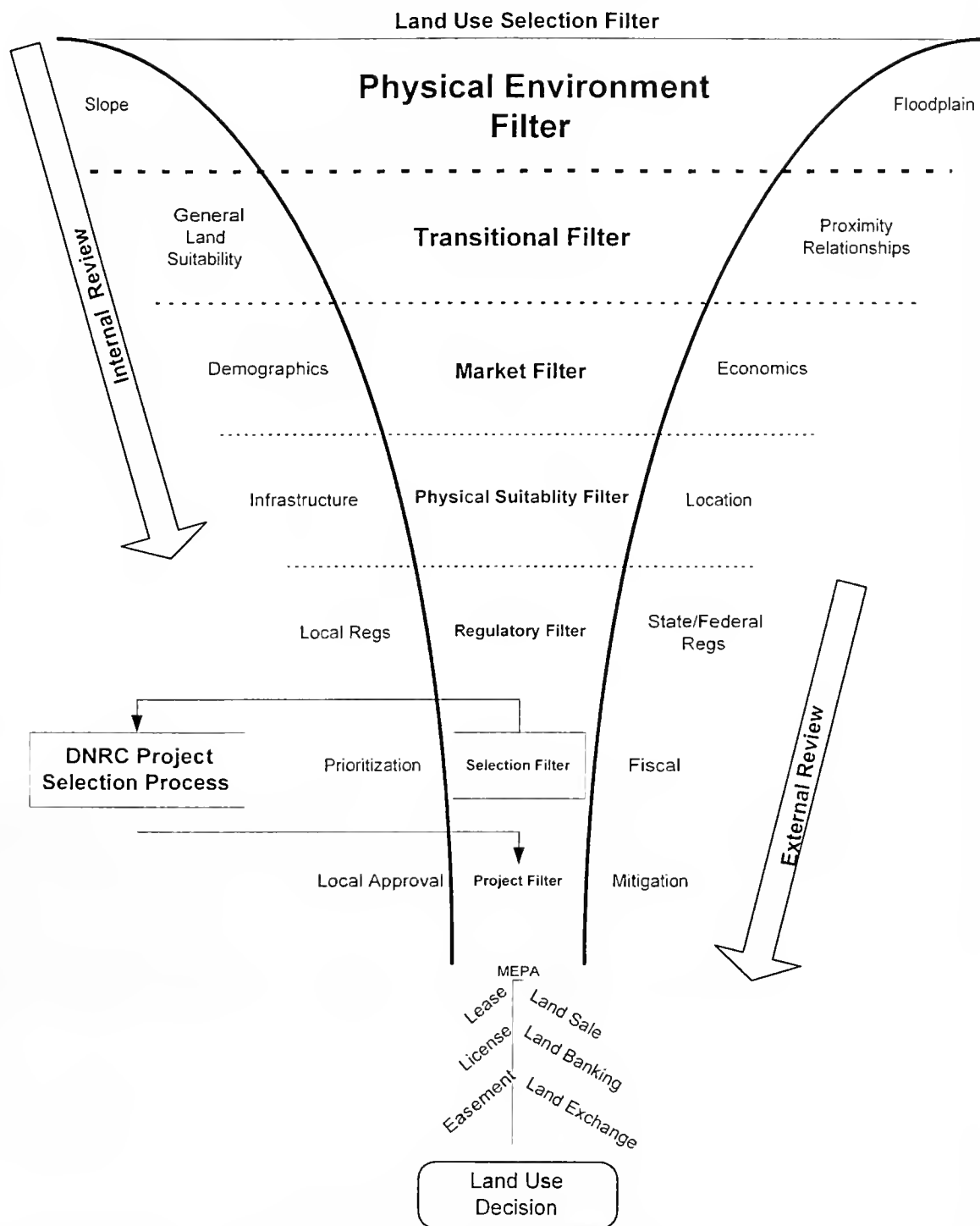


Figure 2-4. Funnel Filter Process

School Trust Lands 5.2 million Acres



The Funnel Filter Process - The funnel filter process would be common to all action alternatives and would be a desirable process for the no-action alternative, as well.

- The Physical Environment Filter – A large percentage of the 5.2 million acres of Trust Lands may not be suitable for residential, commercial, or industrial uses due to physical constraints. For the purpose of this initial review, developable land is generally characterized as lands with slopes less than 25% slope and lands located outside a designated 100 year flood plain. In general, development would not be appropriate on those lands with slopes in excess of 25% or within floodplain areas. However, lands with these characteristics may be suitable for conservation strategies. Development potential on these physically constrained lands would be strictly limited to unusual or unique situations. Based on this initial coarse filter analysis, approximately 86% of Trust Lands would be considered suitable for some level of residential, commercial, or industrial development. A break-out of developable lands by land office is shown in Table 2-5. Notice that in mountainous areas like the Northwestern Land Office, almost 50% of the total Trust acreage of 314,396 is considered unsuitable for development due to these 2 identified physical constraints. While all of the “developable” land is considered generally suitable for residential, only a portion of the entire developable acreage would be appropriate for commercial or industrial uses. The existing program of the REMB has no formal process to accomplish this initial screening of land on a landscape basis. A Coarse Filter Analysis (see Appendix E) is applied on a parcel-by-parcel basis.

Table 2-5. Potentially Developable Lands (acres)							
	NWLO	SWLO	CLO	NELO	SLO	ELO	TOTAL
Total Trust Acres	314,396	233,569	1,254,486	2,003,245	382,115	965,740	5,153,551
Developable Acres*	152,858	142,377	1,001,742	1,853,106	354,845	909,878	4,414,806
* lands on slopes less than 25% and outside 100 year flood plain							

- The Transitional Filter – This second level filter evaluates geo-spatial variables to identify favorable locational attributes of Trust Lands. A GIS model was used to establish proximity relationships of Trust Lands to existing land uses. This data identified lands that are “transitional”, meaning that the lands have some development potential for residential, commercial, and industrial uses. Subsequent filters would be used to determine project level opportunities from this pool of potentially developable lands. Table 2-6 is a summary of lands that may have development potential (measured in acres) within each land office area for rural residential uses, with “High” indicating those lands

most suitable for developed uses. The methodology and detailed results of the GIS study is presented in Appendix C. A Course Filter Analysis technique (Appendix E) is currently performed by the REMB to accomplish similar objectives but mostly on a project-by-project basis.

Land Office	Table 2-6. Lands Acreages for Rural Residential Uses by Suitability Ranking		
	High	Medium	Low
NWLO	28,268	82,074	42,516
SWLO	19,027	72,017	51,333
CLO	16,773	506,089	327,880
NELO	284,097	995,784	573,225
SLO	53,959	195,160	105,726
ELO	114,261	534,260	261,357
Total	516,385	2,385,384	1,362,037

Table 2-7 reflects lands that have close association to existing commercial cores and highway corridors. The acreage estimates are gross to the extent that additional filters would be necessary to determine project level suitability. Please refer to the report by GeoData Services (2004) in Appendix C.

Table 2-7. Lands Potentially Suitable for Commercial or Industrial Uses (acres)							
	NWLO	SWLO	CLO	NELO	SLO	ELO	TOTAL
Acres*	6,940	6,082	16,330	17,220	9,104	9,336	65,012
*Excludes lands with slopes > 25% and located within 100 year floodplain							

There is no known process to identify the full range of conservation opportunities on lands since there is no known direct correlation between conservation demand and real estate market factors. Because of this, the plan alternatives attempt to define conservation opportunities based upon the proximity of trust lands to existing conservation-type lands. Please refer to Table 2-4 and related discussion in Chapter 3. None of the alternatives attempt to discourage conservation strategies on Trust Lands, provided the beneficiaries are

fully compensated for the rights foregone by conservation leases, licenses, and easements.

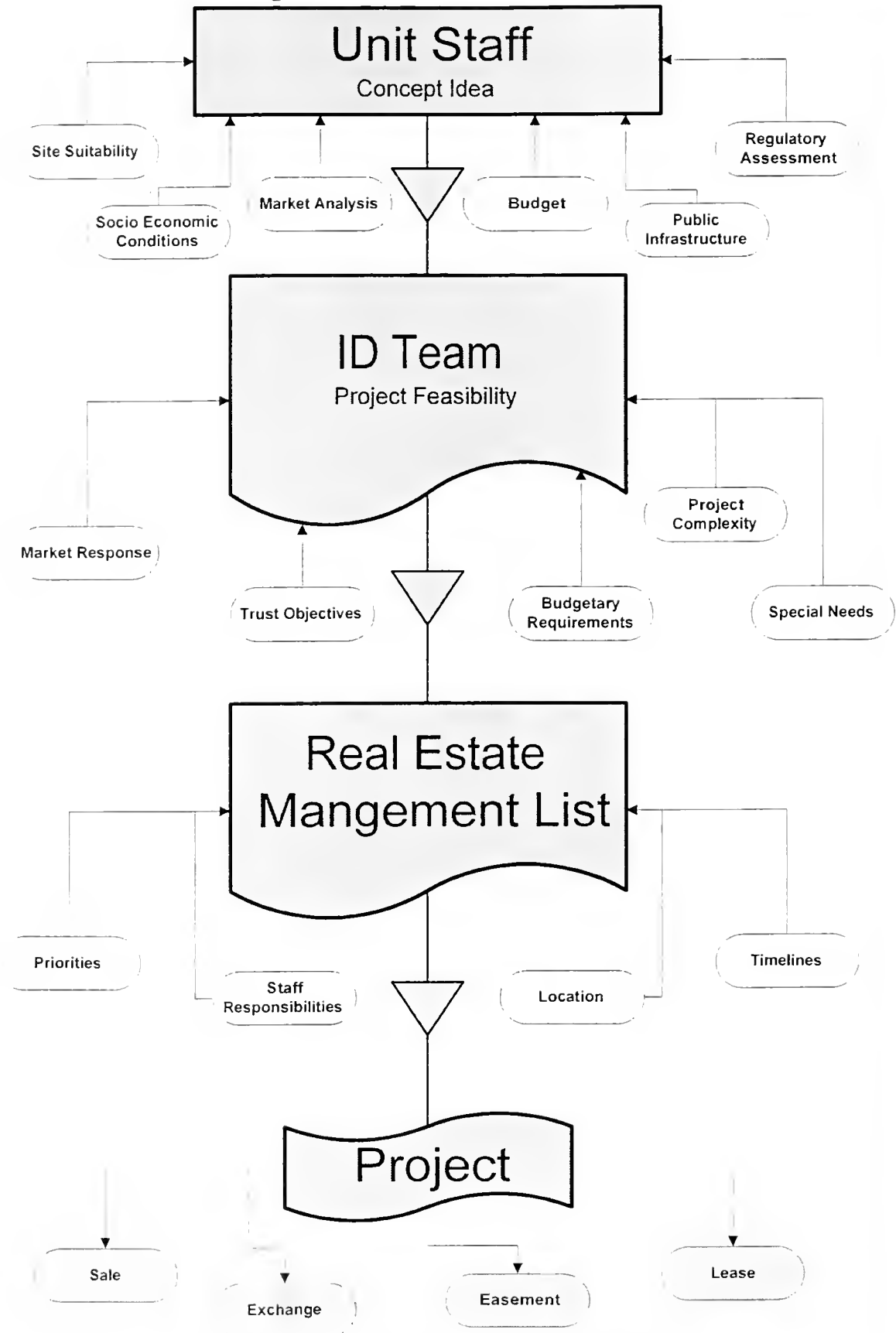
- The Market Filter – The lands filtered through the first two processes may be physically suitable [on a gross or landscape scale] for the identified land uses but may not be suitable from a demographic perspective. A demographic/economic model was used to identify future regional growth in the categories of “rural residential” and “Commercial/Industrial”. Growth, in acres, was identified by defined periods of time extending out to year 2025 by Jackson (2004) with the study included in Appendix D. Estimates of total anticipated rural residential and commercial/industrial growth measured in acres by land office region is summarized in Chapter 4. Under the current program of the REMB, there is no formal methodology in place to evaluate market opportunities within land office regions.

The ratios of Trust Land ownership (Table 2-3) to all developable land ownerships (all lands less federal and water) would be used to assign the share of the expected residential, commercial, and industrial growth on Trust Lands by multiplying the percentage ownership values in Table 2-3 by the corresponding growth estimates depicted in Tables 4-2 and 4-3 of Chapter 4. There is no known method of accurately predicting market or growth demand for future conservation strategies. As stated in the previous section, all plan alternatives would support “conservation” strategies on all Trust Lands.

- The Physical Suitability Filter – This portion of the funnel filter considers the proximity and availability of infrastructure to Trust Lands and serves as an added indicator to the suitability of land for future use and development. The relationship of infrastructure to Trust Lands would be a project level evaluation. Conditions of infrastructure availability and/or feasibility to extend can change dramatically as communities grow and expand. The transitional filter considers some elements of “infrastructure” when identifying growth opportunities but detailed evaluations are only possible on a project level basis.
- The Regulation Filter – This is a project feasibility analysis performed by internal review of prospective projects. This filter considers how land use regulations and environmental laws might affect land use opportunities on Trust Lands. The planning for future uses of Trust Lands would consider community values through locally adopted growth policies. This filter would identify the appropriate uses and scale of potential development on Trust Lands. This filter would also consider other environmental land use regulations that could have some influence on project feasibility. Notable examples of other regulatory filters would include the Montana Antiquities Act and laws related to sanitation, wetland protection, air quality, etc.
- The Selection Filter – The aforementioned filters help to identify lands that might be suitable for development. The “selection” filter would

prioritize project opportunities based upon a real estate analysis, fiscal and staffing considerations, and project timelines (see Figure 2-5). The fiscal evaluation would consider direct costs to the REMB and return to the trust. Staffing analysis would consider the adequacy and expertise of staff to manage a particular project from the initial Request for Proposal (RFP) process to lease administration. Project selection would also consider the perceived market demand for the project.

Figure 2-5. Project Selection Process



- The Project Filter – Once the REMB identifies a project proposal through the filters identified above, project approval through local government review would be sought. The approval process could involve aspects of growth policies and zoning and/or subdivision review, depending on the type of project being considered. Subdivision review would be applicable in most situations involving a use of Trust Land. This would require adherence to specific conditions of approval and to design standards that would be required to mitigate impacts of the proposed use.
- MEPA – Prior to a final land use decision by DNRC, an appropriate level MEPA analysis would be prepared to evaluate the proposed project. Refer to related discussion in Chapter 5.

2.3.1.8 Implementation Strategies

The REMB would employ a number of private and public sector real estate strategies to achieve development and conservation objectives under each of the alternatives. For example, real estate projects may require the formation of a joint venture between the DNRC and private or public interests in order to finance needed infrastructure. The REMB could use innovative real estate planning tools such as transfers of development rights to help target development in areas that are in close proximity to existing infrastructure or in areas of high growth. Density bonuses could be sought from local planning authorities to offer incentives for the provision of open space, for example. State law provides for specific land use authorizations and transactions associated with the management of Trust Lands as outlined below. Implementation strategies described under each alternative are not meant to be exclusive between alternatives. Alternatives B, B-1, C, and C-1 require additional staffing and budget to implement, providing more creative implementation tools available by alternative. However, DNRC would utilize land management and implementation tools under each alternative as staffing and budget allow.

- Land Use Authorizations – Authorizations include leases, licenses, and easements wherein the trust beneficiaries are financially compensated for temporary use of the land. Authority for the issuance and approval of land use authorizations is the responsibility of the Department. More descriptions of authorizations are included in Chapter 3.
- Land Transactions – Montana statute provides for the sale, purchase or exchange of Trust Lands. Furthermore, the state may also engage in land banking which enables the state to use proceeds from sold lands to purchase other lands, easements, or improvements for the benefit of the beneficiaries of the respective trusts. Authority for the issuance and approval of land use transactions rests with the State Board of Land Commissioners. More descriptions of transactions are included in Chapter 3.
- Marketing – Marketing is a necessary and appropriate tool to manage the trust portfolio. Integral components of marketing are described below.

- Advertising -- The REMB can promote the availability of Trust properties through a variety of means including paid advertising in various local, state and national publications, direct contact with businesses and organizations, Internet postings, and informational signs on the available properties. The REMB may also choose to prepare brochures in both electronic and hard copy formats for targeted mailings.
- Real Estate Professional Affiliations – REMB staff may join professional real estate and development organizations and societies to derive a number of benefits. These include joint advertising opportunities, continuing education in the real estate development field to enhance REMB staff expertise, and the ability to engage a larger number of people in promoting Trust Lands.
- The Request for Proposal (RFP) process -- The TLMD is required to solicit competitive proposals in identifying prospective users of Trust Lands. This process requires the preparation of development packages that include the types of project proposals being solicited and associated bidding requirements. The RFP is typically placed in a number of publications and on the Internet.

2.3.1.9 Project Management Roles

- The State Board Of Land Commissioners – The State Board of Land Commissioners (Land Board) has general authority and control over the management of Trust Lands (77-1-202, MCA; Article X, Section 4, Montana Constitution). The DNRC, under the direction of the Land Board, “has charge of the selecting, exchange, classification, appraisal, leasing, management, sale, or other disposition of state lands”, 77-1-301, MCA. However, as stated above, while the DNRC generally is responsible for reviewing and approving authorizations (leases, licenses and easements), the Land Board is responsible for the review and approval of land transactions (sales, exchanges and purchases of lands).
- The Real Estate Management Bureau – All land use proposals on Trust Lands for uses other than agriculture, grazing, and forestry would be evaluated by the REMB and field staff. However, the role of REMB in initiating and processing opportunities may vary by alternative. The level of involvement by REMB would depend, somewhat, on adequacy and expertise of staff, type of project, complexity of project, and a number of other considerations. Depending on each situation, the REMB could share or assign certain project responsibilities to the developer or other affected parties. Relationships with other entities might include partnerships, joint ventures or cooperative agreements and would provide unique opportunities to team-up with other entities to pursue a particular land use objective on Trust Lands.

- The Developer – “Developer” is a broad-use term that generally applies to anyone seeking use of Trust Land for residential, commercial, or industrial uses. Under most situations, the REMB would transfer most of the project approval costs onto the Developer. This could include the costs associated with local government application fees, infrastructure, environmental studies, and other related costs or needs.
- City/County Local Governments – In some circumstances, the REMB may coordinate certain land use objectives with local jurisdictions to satisfy mutual interests and opportunities. This could, for example, include local objectives related to the expansion/extension of infrastructure or providing certain opportunities to achieve local economic or housing objectives.

2.3.1.10 Administration

- Staffing and Staffing Expertise – The ability of DNRC to react, promote, or engage in certain land use opportunities could be affected by the number, type, and expertise of staff within the REMB. Staffing needs would vary by plan alternative and would be linked to revenue objectives.
- Funding and Land Entitlements – There are a number of strategies to achieve revenue objectives for Trust Lands under each of the action alternatives. One strategy would include increasing the number of leases on Trust Lands and prioritizing projects that would typically generate the most income on a per acre basis. Another strategy could include improving the entitlements to trust properties for the purpose of increasing the underlying land values. Such “entitlements” might include extending water, sewer, or roads, and other similar infrastructure improvements. They would also include land use designations (e.g. zoning) favorable to development. The amount of operation dollars to improve land entitlements would vary by alternative.
- Statutory Authority – The Enabling Act (1889), the Montana Constitution, statutes, and court decisions define the purpose and revenue-generating objectives of Trust Lands. However, legislation may be necessary to authorize or clarify certain actions anticipated by the various alternatives. An example would be legislative authority to establish “seed” money for a revolving fund intended to finance certain land improvements intended to improve the underlying value and marketability of Trust Lands. Also, it may be necessary to provide statutory authority for the sale of development rights on Trust Lands and conservation objectives may benefit from broadened authority.

2.3.1.11 Financial Considerations

- Revenue to the Trust Beneficiaries – Each of the action alternatives provides additional revenue to the Trust. Further, regardless of the alternative, the rate of return for each of the types of “other” use – commercial, conservation, residential or industrial – would remain the same (e.g., annual lease payments for residential uses would be equal to 5% of

appraised value under all alternatives). Conservation, residential, commercial, and industrial uses on Trust Lands would generate revenue for the beneficiaries in a number of ways, including:

- Providing revenue to directly to the beneficiaries of the State Trust
 - Providing property tax revenue to local school districts
 - Increasing the local bonding capacity to finance infrastructure improvements including those for schools
- Benefit to the Local Property Tax base – Trust Lands are generally tax-exempt. However, it is assumed that Trust Lands sold or leased for commercial or industrial uses would pay both real and personal property taxes. Residential improvements on leased land would pay taxes on the improvements.
 - State Equalization Funds – In 1965, legislation was adopted providing for reimbursement to counties for loss of revenue because of the tax-exempt status of state-owned land in excess of 6% of total land area, 77-1-594, MCA. In 2002, the state compensated counties a total of \$647,754.
 - Job Creation – As suggested previously, the REMB would be sharing in growth that is already expected to occur in the community. Accordingly, use of Trust Lands for residential, commercial, or industrial uses would not create any new jobs, per se. However, of the new jobs created by projected community growth, it can be expected that Trust Lands would account for 2-20% of the total new community jobs, depending on alternative. Jackson (2004) provides more detail concerning the creation of jobs with development of Trust Lands (Appendix D).
 - Asset Management – The TLMD is responsible for the management of trust lands for a variety of purposes on lands classified as “grazing”, “timber”, “agriculture”, and “other” (77-1-401, MCA). The amount of acreages associated with each use classification is presented in Chapter 3. The REMB is responsible for managing all land transactions (sales, exchanges, transfers) and “other” uses of the land related to residential, commercial, industrial, and conservation. The number of real estate transactions would vary by alternative.

2.3.1.12 Environmental Review and Public Involvement

The REMB, would, in most cases, accomplish public involvement and environmental effects disclosure responsibilities anticipated under the Montana Environmental Policy Act (MEPA) through adherence to local land use policy and regulatory processes. (See related discussion in Chapter 5)

- Relationship to Local Land Use Regulations – At the local level, land development is subject to three primary types of land use policy and/or regulation. These include subdivision regulations, zoning ordinances and growth policies. Montana statutes set forth the items that must be addressed under each, although local jurisdictions may incorporate

additional elements. A complete discussion of local land use planning provisions is found in Chapter 5.

- Relationship to MEPA – In complying with local land use regulatory processes, many of the public involvement and environmental disclosure requirements would be similar to those required under MEPA (75-1-103, MCA and subsequent sections). In those cases where local land use regulations and policies do not address all the necessary MEPA elements, the REMB would undertake the additional necessary review to comply with those MEPA requirements that fall outside of local planning authority. Where local subdivision or zoning ordinances do not address cultural resources (impacts on historic and archeological sites), the REMB would, under MEPA and the Montana Antiquities Act, undertake an analysis of its proposed activities with regard to these resources. In some situations, the local regulatory review and compliance processes may exceed the review requirements of MEPA.

2.3.2 Outcome Requirements

The alternatives are structured to address the objectives of the PEIS while considering the external and internal issues identified through the scoping process. Each alternative is designed to present a management philosophy and decision making framework for the REMB. There are a number of common elements shared between alternatives to ensure maximum public involvement in the decision-making process, protection of the environment, and consideration of local community values, among others. Distinct differences between alternatives are primarily related to the extent Trust Lands share in local growth and how market opportunities are achieved through the use of various real estate tools, project management, personnel, and financial resources.

2.4 IMPLEMENTATION OF PREFERRED ALTERNATIVE

The acreage estimates of increased revenue-generating uses of Trust Lands, for each alternative, are not goals or targets [absolute or otherwise]. Rather, they illustrate the variety in outcomes of implementing three underlying management philosophies, one of which will be selected to be the management strategy, the Plan. The main difference between the three management philosophies is the relative degree to which the REMB will participate in and benefit from the expected increase of demand in land uses in Montana. Those three philosophies of REMB participation in the increased utilization of land uses are: less than proportionate, proportionate, and more than proportionate (to the residential, commercial, industrial and conservation uses of other lands in the same region).

The underlying expectation inherent in the design of every alternative is that the residential, commercial, and industrial uses of Trust Lands will increase in some corresponding fashion to increased growth in the state of Montana. The growth (or increased use) estimates for new development on all lands, measured in acres, is calculated utilizing population and economic projections. Corresponding increased growth in these three uses of Trust Lands will obviously depend on characteristics conducive to that growth (proximity of roads, services, etc.) Presently, there is no known similar correlation (or model) between economic/population growth and the increase (or decline) in the number of conservation easements or purchases. However, a proximity model to other existing conservation-type lands is described to help identify and

prioritize conservation opportunities (easements, development rights purchases) under all alternatives, to provide a measure of comparison of alternatives (strategies).

The selection and implementation of a preferred alternative will define how future land use opportunities will be addressed, given the level of staffing, funding, legislative priorities and authorization, and implementation of real estate tools associated with that alternative. The proportional share of the residential, commercial and industrial markets that the REMB is able to realize will be based on how well the REMB is able to respond to market conditions. The analyzed alternatives represent a sliding scale from "reactive" (Alt A, no-action, continued current program) to "highly responsive" (Alt C and C-1 - Focused Portfolio), each with a corresponding, relative increase in the share of the residential, commercial and industrial uses occurring on Trust Lands (displayed in acres).

The selected alternative will provide the overall management philosophy for the REMB that will determine the emphasis that will be employed in specific land management decisions. The resulting levels of development on Trust Lands will provide a monitoring indicator and will not be the critical test of success or failure. This is not to suggest that tracking development growth (in acres) on Trust Lands has no value towards assessing implementation of the philosophy of a particular alternative, but only that it is one element of monitoring progress towards successful implementation of the selected alternative, the Plan.

Tracking (accounting, counting) the number of new acres developed for residential, commercial, or industrial uses, or the number of new acres associated with "conservation" is described below.

Conservation – Conservation acres are those lands that have been secured with a lease, easement, or sale for conservation values (open space, natural areas, parks, wildlife habitat, or similar purposes). Conservation would be achieved through:

- Conservation lease or license;
- Securing of development rights through lease, license or permanent disposition;
- Conservation easement;
- Sale of land for conservation use; and
- Purchased property or property received in exchange that is already dedicated or deed restricted for conservation purposes.

Residential – Residential acres are those trust lands that are developed for residential uses at a land use density of at least 1 unit per 25 acres. Residential acres would include:

- Trust lands leased for residential use;
- Trust lands sold at residential values for residential uses;
- Trust lands exchanged where the exchanged trust land is valued (highest and best use analysis) for residential uses; and
- Purchased property or property received in exchange that is already developed and operating for residential uses.

Commercial – Commercial acres are those trust lands that are developed for commercial uses (this would also include certain residential uses normally assessed by the

Department of Revenue as "commercial, such as apartments.) Commercial acres would include:

- Trust lands leased for commercial use;
- Trust lands sold at commercial values for commercial uses;
- Trust lands exchanged where the exchanged trust land is valued (highest and best use analysis) for commercial uses; and
- Purchased property or property received in exchange that is already developed and operating for commercial uses.

Industrial -- Industrial acres are those trust lands that are developed for industrial uses
Industrial acres would include:

- Trust lands leased for industrial use;
- Trust lands sold at industrial values for industrial uses;
- Trust lands exchanged where the exchanged trust land is valued (highest and best use analysis) for industrial uses; and
- Purchased property or property received in exchange that is already developed and operating for industrial uses.

Rural tract lands (density of 1 dwelling unit per 25 acres or greater), public easements, parks, schools, public facilities such as recreation fields (or similar uses), and wind mills, were not included in the rural residential or commercial/industrial forecast models. The associated land areas would be tracked for monitoring purposes but would have no direct relationship, from an accounting perspective, to the modeled acreage estimates.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

DNRC is required to consider only alternatives that are realistic, technologically available, and that represent a course of action that bears a logical relationship to the proposal being evaluated (36.2.5552.b ARM; 75-1-201 (2)(iv)(C)(I), MCA).

2.5.1 Minimal/Passive

Some commentators suggested that the DNRC consider a passive alternative, where the REMB would defer new residential, commercial and industrial uses and allow existing land use authorizations to expire. The only uses allowed would have to be non-consumptive, non-extractive, and reversible. Land use activities involving commercial, industrial and residential development would not be authorized. Sales, exchanges and easements would be minimal. This alternative was eliminated from detailed study because it conflicts with the Mission of the Trust Lands Management Division and first objective of the proposed action: Generate increased revenue for trust beneficiaries.

2.5.2 Aggressive Management

Some commented that the REMB should aggressively market residential, commercial and industrial uses wherever possible and use all exemptions available to maximize income to the beneficiaries. The DNRC should accept some adverse environmental effects and adverse public comment in order to earn greater revenue for the trust beneficiaries. This alternative was eliminated because it conflicts with the following objectives listed in Section 1.3:

- It would be in direct conflict with the TLMD's mission to manage Trust Land resources to produce revenues for the trust beneficiaries while considering environmental factors and protecting the future income-generating capacity of the land.
- It would de-emphasize opportunities for public involvement in decisions affecting real estate management.
- It would not simplify the project level evaluation process

2.5.3 Long Term Resource Management and Conservation

Some suggested REMB emphasize the protection of wildlife habitat, open space and public recreation opportunity, and the placement of public facilities on Trust Lands. Residential, commercial and industrial uses would be considered only to the degree that such uses enhanced or did not conflict with these primary resource values.

The primary focus would be placed on using lease and easement agreements and other conservation strategies for the preservation of wildlife habitat, open space, and other natural and cultural resources. This approach would be primarily taken in rural areas, although in certain circumstances it may be appropriate in urban areas with unique natural resource values. If there were conflicts, wildlife and natural resource values would take precedence over all other uses, including public access and recreation.

This alternative was eliminated because it did not address the TLMD's mission related to the generation of revenue for the beneficiaries. In addition, conservation would be a possible land use under any of the alternatives being considered in this EIS, provided the Trusts were fully compensated for the foregone development rights. Finally, current legislation (77-2-101, MCA) limits the use of conservation easements on Trust Lands. Under this statute, conservation easements may only be granted to the Montana Department of Fish, Wildlife, and Parks (FWP) for parcels that are surrounded by or adjacent to land owned by FWP as of January 1, 2001. They may be awarded to a to a nonprofit corporation only for parcels that are surrounded by or adjacent to land owned by that same nonprofit corporation as of January 1, 2001. However, Alternatives B-1 and C-1 were influenced by these concepts.

2.6 DESCRIPTION OF PROPOSED ALTERNATIVES

Five program alternatives are proposed. Guidance to the development of alternatives and authority to prepare a programmatic EIS are set forth by MEPA rules including 36.2.537 and 36.2.529, ARM. Alternative A is the No Action alternative, representing a status-quo approach to real estate management on Trust Lands reflecting the on-going program of the Real Estate management Bureau of the TLMD. Alternative B assumes that development on Trust Lands would keep pace with regional rates of growth related to residential, commercial, and industrial uses. Alternative C assumes that Trust Lands would also share in the expected growth of a region but that share would represent a higher proportion of the expected growth [as compared to Alternative B]. Two of the alternatives also contain a "sub-alternative" related to conservation. Alternatives B1 and C1 provide a stronger emphasis for conservation strategies. In all cases conservation uses must compensate the Trust based on the market value of the "purchased" development rights.

2.6.1 Alternative A – Current Program

The REMB currently generates income from leases, licenses, sales, and easements related to a wide range of land use activities. The Bureau may also use a variety of real estate tools, such as land exchanges and land banking, to position property for future income generating potential. Leasing of land for commercial and industrial uses is an emerging source of increased revenue to the trust and residential leasing remains a viable portion of the leasing portfolio.

Trust Lands have been developed and managed historically for residential, commercial and industrial uses since statehood. The majority of residential leases were established in the late 1940's and early 1950's. The American Timber Lumber Mill, an industrial use located in the Northwest Land Office region, was developed in 1947 and portions of that operation are still active today. Since 1996, when the Department created a separate bureau to address commercial, industrial and residential uses, the management of these uses has become more proactive. A commercial Development Working Group meets annually to allocate budgets and prioritize projects in the Unit/Land offices.

Under Alternative A, the no-action alternative, the REMB would continue to share in the local real estate market on Trust Lands but to a lesser extent than what might otherwise be expected by local market conditions. Under this alternative, the Bureau would remain receptive to new income opportunities in all land use categories. Opportunities to expand the existing portfolio and keep pace with community rates of growth would remain somewhat constrained under this alternative by funding and staffing limited to the current levels.

2.6.1.1 Relationship to Community Growth

Under this alternative, REMB would move the existing real estate program forward into the future in a fashion that remains cognizant of current market conditions. New projects would be identified and prioritized primarily based upon outside inquiries and/or proposals from DNRC personnel with land planning expertise. Under this alternative, it is expected that Trust Lands would realize less, on a proportional basis, than a fair share of the regional market growth. Estimated residential, commercial, and industrial growth under this Alternative assumes Trust Lands share of new growth would be no more than 50% of the market share expected on a land proportion basis. The projected ranges of annual growth of "rural residential" and "commercial/industrial" on Trust Lands under Alternative A through the year 2025 is estimated in Table 2-8 and Table 2-9, respectfully.

Table 2-8. Alternative A: Growth Estimates for Rural Residential Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2003-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	539 - 898	351 - 585	395 - 599	374 - 623	1659-2705
SWLO	300 - 500	207 - 345	215 - 358	222 - 370	944-1573
CLO	110 - 183	212 - 353	223 - 371	233 - 358	778-1265
NELO	(10) - (6)	2 - 4	3 - 5	5 - 8	0-11
SLO	65 - 109	44 - 74	46 - 76	48 - 80	203-339
ELO	(5) - (9)	2 - 3	3 - 5	2 - 4	2-3
Total Ranges	999-1675	818-1364	885-1414	884-1443	3586-5896

Table 2-9. Alternative A: Growth Estimates for Commercial/Industrial Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2002-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	127 – 212	84 – 140	103 – 171	102 – 171	416-694
SWLO	111 – 184	73 – 122	92 – 153	92 – 153	368-612
CLO	151 – 252	95 – 159	119 – 199	119 – 199	484-809
NELO	35 – 58	28 – 46	33 – 55	33 – 55	129-214
SLO	52 – 87	35 – 58	43 – 72	43 – 72	173-289
ELO	13 - 21	5 - 9	7 – 11	7 - 11	32-52
Total Ranges	489-814	320-534	397-661	396-661	1602-2670

2.6.1.2 Land Use Categories

The REMB would be open to all land use inquiries under this alternative and in some circumstances would take the lead in identifying new land use opportunities. Some opportunities for new revenue sources may be lost due to limitations of regional staffing or expertise.

- Residential – In the last 3 years 11 new residential leases have been created through state and local subdivision regulations. Managing the existing residential lease properties would continue to have higher priority than establishing new residential leases. New leasing opportunities would probably be associated with high value properties where leasing may remain a viable option to the lessee. Other viable approaches to residential leasing may involve apartment or manufactured home developments. Properties identified as “residential” from a highest and best use analysis could also be sold or exchanged to realize the market value of the property.
- Commercial – New commercial opportunities would continue to be identified through Department initiated projects and unsolicited inquiries. Under the current program, Trust Lands dedicated to commercial uses under lease agreements generate a state wide average of \$130 per acre over 1,812 acres dedicated to commercial uses. Recent projects are Lewis and Clark Subdivision in Bozeman, Hampton Inn in Great Falls, and Lowe’s Home Improvement Center in Kalispell.
- Industrial – New industrial opportunities would continue to be identified through department initiated projects and unsolicited inquiries. Under the current program, Trust Lands dedicated to industrial uses through lease agreements generate a state wide average of \$ 241 per acre over 872 acres dedicated to industrial uses.
- Conservation – Several major conservation projects that have occurred since 1996 including the issuance of a lease agreement for the development rights on property acquired through a land exchange from Ted Turner. In March 2004, the Land Board approved a conservation easement to the Department of Fish Wildlife and Parks on Trust Land in and adjacent to

the Blackfoot Clearwater Wildlife Management Area. The associated leases generate an average of \$4 per acre on 14,633 acres.

Under Alternative A, the existing program, the REMB considers conservation opportunities as a priority on a percentage of those Trust Lands lying adjacent to existing conservation lands. These would include federally designated areas such as National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers; Wildlife and Game Refuges and Public/Private Conservation Easements.

The percentage would correspond to the percentage share that Trust Lands have to the entire land base of the land office. Table 2-10 identifies the number of acres per land office area that could be considered for conservation based on the current approach, over the life of the Real Estate Management Plan.

Table 2-10. Potential Conservation Acreage Under Alternative A			
Land Office	Trust Acres Adjacent to Conservation Areas	Percentage of Land Base	Acres times Percentage* (acres)
NWLO	22,233.3	3.5%	778
SWLO	12,093.2	3.1%	375
CLO	72,276.3	5.5%	3,975
NELO	66,688.7	7%	4,668
SLO	3,522.0	3.7%	130
ELO	10,464.1	6.2%	649
Total	187,277.6		10,575
*This column reflects the total estimated acres of conservation through the year 2025			

The estimated "acres" is a guide but not a cap. The success at achieving these conservation acres largely depends on general public interest and available funding by conservation groups and other interested parties.

2.6.1.3 Location Descriptors

- Urban – New retail and office commercial, industrial, and high density residential uses would continue to be primarily concentrated in urban locations.
- Suburban – Under the current program, low to medium residential density uses are considered appropriate in suburban locations as are some types of neighborhood commercial.
- Rural – Low density residential uses, recreation resorts, and resource based industrial uses are considered appropriate in rural locations under the current program. Other types of commercial are appropriate, such as communication towers and wind farms.

2.6.1.4 Project Selection & Prioritization – (Relationship to the Funnel Process)

Under the existing program of the REMB, the project selection and prioritization methodology is less structured than would be the case under the four actions alternatives. Project opportunities are more often reactive than proactive and project priorities are identified from annual meetings of a Commercial Development Working Group. Projects are typically considered under a coarse filter analysis that addresses general site suitability with respect to the physical and natural environment as well as to the proximity to infrastructure. Consideration is also given to the availability of departmental resources that can be devoted to project development. Under Alternative A, the REMB would continue to strive for a more comprehensive approach to the project filtration process such as set forth under the "Funnel Process" in the action alternatives.

2.6.1.5 Implementation Strategies

- Land Use Authorizations
 - Leases – Under Alternative A, the REMB would continue to maintain and manage existing leases and respond to requests for new leases as resources and staff time allow. The Bureau would continue to place greater emphasis on seeking new commercial and industrial lessees rather than increasing the number of residential leases. Conservation leases would be considered on a request basis.
 - Licenses – The REMB would continue to issue licenses only in response to demand. The Bureau would not seek to increase the number of licenses it issues under Alternative A. Conservation licenses would be considered on a request basis.
 - Easements – The REMB would continue work with adjacent land owners and local government officials in response to proposed easements for a variety of public and private purposes on a case by case basis. Expanded opportunities for conservation easements would be limited as provided for under current law.
- Land Transactions
 - Land Banking – Under Alternative A, the REMB would design a land banking pilot program that would address agriculture, grazing, minerals and timber holdings. For example, the REMB might sell lower income producing grazing lands in order to purchase more lucrative agricultural lands. However, commercial, industrial and residential uses would be a limited part of this initial land banking program.
 - Land Exchanges – Under the existing program, land exchanges would occur primarily in response to inquiries. However if the staff is able to identify a clear advantage in pursuing a land exchange, the REMB may initiate a transaction within the limits of existing resources.
 - Land Sales – Land sales would not be a high priority. However, objectives related to new residential opportunities would likely be achieved through "sale" as opposed to leasing. The Department would continue the existing residential leasing program.

- Marketing
 - Advertising – Advertising would be accomplished with generally “passive” information through web sites and RFP processes mostly related to commercial and industrial inquiries.
 - Real Estate Affiliations – While REMB staff might work with individual real estate professionals in managing its commercial, industrial and residential properties, it is unlikely that any resources would be committed to affiliating with real estate or development organizations or in preparing real estate marketing materials for wide spread distribution.
 - RFP Process – Under Alternative A, the REMB would initiate an RFP process when there is a demonstrated interest in a particular property.

2.6.1.6 Project Management Roles

- The Real Estate Management Bureau – Under Alternative A, the Bureau would maintain its current real estate management approach. Largely, projects would be identified by outside interests. Little time would be spent working with local government or with potential developers to address necessary entitlements for the development of transitional lands. Efforts would generally be spent developing those projects that would provide the highest return for the least amount of effort.
- The Developer – The Developer, under this alternative, would provide the primary impetus for concept development and project design. The Bureau would be more likely to entertain proposals where the potential private user of Trust Land would be responsible for installing needed infrastructure, seeking appropriate land use regulatory designations and obtaining required approvals
- City/County Local Governments – Under Alternative A, the Bureau would coordinate with City and County on limited basis. All local regulatory processes related to the development of Trust Lands would be addressed. However, while the Bureau may participate in expressing its opinions regarding city planning and the availability of infrastructure, it would not consistently engage in efforts to coordinate with the local government to achieve development objectives. Current efforts of this form of coordination include a neighborhood planning effort in the area of Whitefish, involving the city of Whitefish and Flathead County. The city of Kalispell is also discussing options for locating a water tower and fire station on Trust Land in Kalispell.

2.6.1.7 Administration

- Staffing and Staffing Expertise – Under Alternative A, staffing and staffing expertise would remain unchanged. There may be some limited sharing of

personnel among Land Offices where certain expertise may be brought to a specific project on an as needed basis.

- Funding – The REMB would not require additional funding allocations under this alternative. Funding to seek improved entitlements to property would not generally be available.
- Statutory Authority – It may be necessary to expand the authority to create conservation easements under this Alternative. Otherwise, legislative actions would probably be limited to issues of clarification and authority related to existing statutes.

2.6.1.8 Financial Considerations

- Revenue to Trust – Revenues to the Trust would increase to some extent under Alternative A. Revenue would be from existing licenses and leases and from residential land sales and expanded ground leases for commercial and industrial uses. Revenue would not be proportional to the projected market growth.
- Property Tax Benefit – Under Alternative A, the property tax benefit would be attributable to beneficial use taxes associated with industrial and commercial leases and personal property taxes paid on residential improvements. The conversion of lands to the private sector through sale and exchanges would be limited. Lands held for conservation purposes would likely be exempt from ad valorem taxes, but may pay for services or infrastructure improvements.
- Equalization Taxes – The allocation of money to counties in lieu of taxes would not be substantially affected under this alternative.
- Job Creation – New jobs would be created in direct proportion to the number of new developed uses on trust lands. Under this alternative, it could be assumed that Trust Lands would share in 2-5% of new development. Therefore, it could be concluded that Trust Lands would be responsible for 2-5 % of the new jobs.
- Asset Management – Lands classified as “other” would not appreciably reduce the number of acres associated with the other TLMD Bureaus. Within the REMB, development would occur largely in response to unsolicited proposals for commercial, industrial and conservation purposes. Maintaining existing residential leases would have priority over new leases. New residential objectives would be achieved largely through “sales”.

2.6.1.9 Environmental Review and Public Involvement

- Local Land Use Regulations – The REMB would keep the local governing bodies and associated planning staff informed of their activities and would follow the local regulatory process for permitting various land uses as needed. The Bureau staff would work to remain informed of local land

use policy development and its potential impact on state lands. However, DNRC would not, for the most part, actively engage in the formulation of policies and regulations related to land use.

- In those cases where specific land use opportunities present themselves, the REMB may, from time to time, approach the local governing bodies to learn of any potential conflicts with local land use policies and what actions should be taken to mitigate any anticipated impacts.
- MEPA – In most cases, the Bureau would continue to strive to address all MEPA requirements and would not seek any exclusions or exemptions. The Bureau would work to coordinate public involvement requirements under MEPA with local public hearing schedules to help streamline the review process and reduce costs.

2.6.2 Alternative B - Diversification of Portfolio

Alternative B seeks to secure a broad based portfolio of income producing properties. This would be accomplished through proactive strategies intended to keep pace with regional market growth and by capturing opportunities identified by others.

2.6.2.1 Relationship to Community Growth

The range of projected annual growth of “rural residential” and “commercial/industrial” on Trust Lands under Alternative B is shown in Tables 2-11 and 2-12, respectfully.

These values represent a direct proportion of shared growth based upon the proportion of Trust Lands to other land ownerships (minus “federal” and “water”) within a specific land office region.

Table 2-11. Alternative B: Growth Estimates for Rural Residential Acreages on Trust Lands

Land Office Region	Growth Estimates (acres) by Time Period				
	2003-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	1077 – 1795	702 – 1170	718 – 1196	747 – 1245	3244-5406
SWLO	600 – 1000	414 – 690	428 – 714	444 – 740	1886-3144
CLO	219 – 365	424 – 706	446 – 743	467 – 776	1556-2590
NELO	(12) – (20)	5 – 8	6 – 10	8 – 14	7-12
SLO	131 - 218	88 – 146	92 - 153	96 – 160	407-677
ELO	(11) – (18)	2 – 4	6 - 10	4 - 6	1-2
Total	2004-3340	1635-2724	1696-2826	1766-2165	7101-11055

Table 2-12. Alternative B: Growth Estimates for Commercial/Industrial Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2002-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	254 – 423	168 – 280	185 – 309	205 – 342	812-1354
SWLO	221 – 368	146 - 244	164 – 274	183 – 305	714-1191
CLO	303 – 505	190 – 317	215 – 358	238 – 397	946-1577
NELO	70 – 117	55 – 92	60 – 100	66 – 110	251-419
SLO	104 – 174	69 – 115	77 – 129	86 – 144	336-562
ELO	26 - 43	11 - 18	12 - 21	14 - 23	63-105
Total	978-1630	639-1066	713-1191	792-1321	3122-5208

2.6.2.2 Land Use Categories

Under this alternative, the Bureau would attempt to balance the real estate portfolio with uses associated with each of the land use categories. Projects would be prioritized on a statewide basis to benefit from shared expertise and available funding.

- Residential – Income from lands with residential values would be realized primarily through land sales and land banking. Some leasing of land for residential uses may be pursued in urban locations and in high value amenity locations.
- Commercial – Commercial leasing opportunities would be pursued primarily in urban and highway locations. Suburban and rural opportunities would primarily be identified by outside interests.
- Industrial – Industrial opportunities would be prioritized in identified growth areas where adequate infrastructure is available to serve the intended uses. Public requests for industrial uses on Trust Lands, such as sewage treatment facilities, would be evaluated on a case-by-case basis.
- Conservation – Under Alternative B, the REMB would consider conservation opportunities a priority on a percentage of those Trust Lands lying within one half mile of land with existing conservation designations. These would include federally designated areas such as National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers; Wildlife and Game Refuges and Public/Private Conservation Easements. The percentage of conservation uses on Trust Lands would correspond to the percentage share that Trust Lands have of the entire land base. Conservation use would generally be achieved through the sale of development rights on lands with residential values. Table 2-13 identifies the number of acres per land office area that could be considered for conservation based on this approach, over the life of the Real Estate Management Plan. The acreages presented are an estimate only and do not intend to suggest a limit or cap to the acres that could be placed in conservation use. Likewise, the purchasing of development or conservation rights is not in fact a utilization of those development rights, and therefore, those acres would not be calculated in the assessment of growth of residential development.

Table 12-13. Potential Conservation Acreage Under Alternative B

Land Office	Trust Acres within 0.5 miles of Conservation Lands	Percentage of Land Base	Acres times Percentage (Acres)*
NWLO	38,501.9	3.5%	1,348
SWLO	26,223.7	3.1%	813
CLO	130,830.8	5.5%	7,196
NELO	101,302.7	7%	7,091
SLO	12,319.2	3.7%	456
ELO	20,947.3	6.2%	1,299
Total	330,125.6		18,203

*Column represents total conservation acres through the year 2025

2.6.2.3 Location Descriptors

New revenue generating projects would be linked closely to regional market conditions. Under this alternative, the REMB would attempt to attain a proportional share of the anticipated market growth of a region. In general, projects would be located on sites with high suitability ranking (see Table 2-6).

- Urban – New retail and office commercial opportunities and high density residential uses would primarily be located on Trust Lands located in close proximity to urban locations.
- Suburban – Low to medium residential density uses would be appropriate in suburban locations as would some types of neighborhood commercial developments.
- Rural – Low density residential uses, recreation resorts, and resource based industrial uses would be appropriate to rural locations. Other types of commercial may also be appropriate, such as communication towers.

2.6.2.4 Project Selection & Prioritization – (Relationship to the Funnel Process)

The Bureau would make use of the funnel process as described in Section 2.3.1 and assume a more active role [as compared to Alternative A] in creating new revenue opportunities for the trusts. This would include the identification of lands suitable for development and the active pursuit of the entitlements that would help position the lands in the market place. In addition, more staff resources would be directed towards selecting and ranking projects for more specific project level review.

2.6.2.5 Implementation Strategies

Under Alternative B, the REMB would make use of a variety of real estate tools to meet its objectives to keep pace with community growth. In higher growth areas, the REMB is likely to engage in various transactions in order to position itself to take advantage of the available market. In areas where there is little or no growth, the REMB may chose to sell properties and buy lands or existing improvements that can provide a greater return elsewhere. Where opportunities for joint ventures present themselves, the Bureau may

forge relationships with private and/or public developers in order to bring more resources to site and project development.

- Land Use Authorizations
 - Leases – The REMB would continue to maintain and manage existing leases and respond to requests for new leases under Alternative B. While some residential leases would be considered, overall, greater emphasis would be placed on seeking new commercial and industrial lessees.
 - Licenses – Under Alternative B, the Bureau would continue to respond to individual license requests, but generally licensing would have a lower priority than under Alternative A. Greater emphasis, however, would be placed on proposals from potential lessees that offer a higher projected rate of return to the trust.
 - Easements – The REMB would work with adjacent land owners and local government officials in response to proposed easements for a variety of public and private purposes on a case by case basis. Easement opportunities on lands that have conservation values would be limited pending changes to existing laws.
- Land Transactions
 - Land Banking – Under Alternative B, the REMB would use land exchanges to acquire lands with higher revenue generating potential and improved public access. In addition, the Bureau would also, to some extent, use land banking to acquire lands that are well positioned to take advantage of future revenue generation and lands that have an existing revenue stream (existing revenue producing activities on the land). Under current rules, the role of land banking may not be an effective tool for repositioning land values into existing developed properties.
 - Land Exchanges – Under Alternative B, the REMB would respond to inquiries related to land exchanges. In addition, the Bureau would seek land exchange opportunities that would result in better present and future income. The REMB would also consider land exchanges that would result in a mixed acquisition wherein equal acres would be achieved in addition to other property that would have immediate income potential.
 - Land Sales – Land sales and land banking would be the primary tools to achieve the residential objectives. However, leasing of land for residential uses would be considered if land sales or land banking could not be accomplished. The Department would continue the existing residential leasing program.

- **Marketing**
 - Advertising – The REMB would make use of a number of lower cost advertising strategies to promote land use objectives on state Trust Lands. These would include both print and electronic media and the target markets would generally be regional. Location signs, and advertisements in real estate circulars would also be utilized. The Bureau would initiate a specific marketing strategy to promote conservation objectives.
 - Real Estate Affiliations – The REMB would work with real estate development organizations in order to promote Trust Land properties more widely. The Bureau staff would contact real estate professionals to assist in marketing lands and join real estate professional organizations in order to achieve greater visibility in the community.
 - RFP Process – Generally, the RFP Process would be initiated in response to specific inquiries. However, in some cases the REMB might work to enhance a property's market position. This would include the improvements of various entitlements associated with the land including physical infrastructure and land use designations prior to the issuance of an RFP.

2.6.2.6 Project Management Roles

- The Real Estate Management Bureau – The REMB would take a more active role in the identification, development, and management of residential, industrial, and commercial uses. In addition to responding to unsolicited proposals, the Bureau would identify potential projects and undertake preliminary concept development and feasibility analyses in preparation for solicitation of project proposals.
- The Developer – The REMB would work with potential developers to secure necessary entitlements including infrastructure and land use designations as needed. This might be accomplished through partnership agreements and other cooperative arrangements. While the REMB would take a greater role in project development than under Alternative A, the private (or public) developer would typically bear the majority of the costs associated with site preparation and with meeting any associated regulatory requirements.
- City/County Local Governments – The REMB would work closely with local governing bodies to assure a well-planned program of development. The relationship would include participation in local land planning decision making, which could affect the future potential of Trust Lands. The Bureau would also work closely with city and county governments as they plan for infrastructure development. At the project level, the REMB would coordinate with local governments to comply with land use regulatory processes including public involvement requirements and to coordinate those processes with DNRC responsibilities under MEPA.

2.6.2.7 Administration

- **Staffing and Staffing Expertise** – Alternative B may require additional staff. Current staff levels may not be adequate to develop and evaluate project proposals or to work with developers and government officials. Specific expertise in planning, real estate appraisal, marketing, engineering, and finance would be particularly important. Three additional employees over the existing staffing (Alternative A) may be necessary. The Bureau would emphasize shared expertise and establish teams of project planning and development personnel that could be assigned based on state-wide priorities. Whenever possible, staffing needs would be achieved through reassignment of vacant FTEs (Full Time Equivalent Employees).
- **Funding** – Alternative B may require the allocation of additional financial resources to the REMB. Additional funding may be necessary for increased staffing and project support, including costs to improve land entitlements. Additional funding sources may be sought to achieve program objectives through a development improvement fund (revolving) and a percentage share of lease and sale revenue. Up to \$500,000 per year would be sought to improve land entitlements.
- **Statutory Authority** – Legislation would be necessary to authorize a special development revolving fund and any other special funding requests. A change in the law pertaining to conservation easements would also be necessary to achieve conservation objectives.

2.6.2.8 Financial Considerations

- **Revenue to Trust** – New revenue sources would primarily be from (1) land sales of unimproved residential valued properties, (2) commercial leases, (3) industrial leases, and (4) conservation licenses, leases, and easements. Residential properties (unimproved) provide the largest opportunity for new income.
- **Property Tax** – The property tax benefit would be attributable to beneficial use taxes associated with industrial and commercial leases and personal property taxes paid on residential improvements. In addition, it is anticipated that unimproved residential-valued properties would be converted to private ownership through sales and land banking, creating additional property tax revenue for the community. Lands held for conservation purposes would likely be exempt from ad valorem taxes, but may pay for services or infrastructure improvements.
- **Equalization Payments** – Under this Alternative, the amount of land converted to “other” remains well under 1% (0.3) of the total Trust Land area. As such, there would be no appreciable change expected to county equalization receipts. However, tax revenue from leased and sold properties would increase for most of the central and western counties.

- Job Creation – Since Trust Lands would only be sharing in the expected growth of a community; no new jobs would actually be created. However, under this alternative, it could be assumed that Trust Lands would experience 4-10% of new development and so it could be concluded that Trust Lands would be responsible for 4-10 % of the new jobs.
- Asset Management – The REMB would expand its current role relative to the other Trust Land portfolios (timber, agriculture, grazing and minerals). Within the REMB, development would occur both in response to unsolicited proposals and through Bureau initiated activities. Management would emphasize development of those properties and uses that would provide the greatest return relative to any investment required.

2.6.2.9 Environmental Review and Public Involvement

- Local Land Use Regulations – The REMB would work with local governing bodies to identify ways to engage in development activities within the framework of local land use policies and regulatory processes. From time to time, the REMB would participate in discussions at the local level regarding policy formulation and work to coordinate its planning processes with those of the local governments, particularly when such activities would enhance revenue opportunities. The REMB would also engage in neighborhood planning processes that serve to provide necessary entitlements for development with respect to local land use policies and regulations. Projects would meet or exceed land use development standards as set forth in local, state and federal regulations and policies. In those cases where local jurisdictions do not have land use regulations and policies in place or in those cases where local policies and regulations are limited, the DNRC would follow model regulations formulated at the state level.
- MEPA – All projects would be developed in compliance with MEPA. For those projects approved through the local regulatory processes, MEPA and associated analyses would largely be achieved by adhering to the local review processes. Where appropriate, the REMB would seek categorical exclusions from MEPA in cases where local land use regulations adequately evaluate (relative to the MEPA process) the impacts of a project.

2.6.3 Alternative B-1: Diversified Portfolio – Conservation Priority

Alternative B-1 incorporates all of the elements of Alternative B with the exception of Conservation uses on Trust Lands. As under Alternative B, the REMB would consider conservation opportunities a priority on a percentage of those Trust Lands lying within one half mile of land with such existing conservation lands National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers; Wildlife and Game Refuges and Public/Private Conservation Easements. The REMB would strive to achieve a percentage of conservation uses on Trust Lands that would correspond to the percentage share that Trust Lands have of the entire land base. Conservation use would generally be achieved through the sale of development rights on lands with residential values. Under Alternative B no development rights purchases would apply towards the total estimated share (acreage) of residential development on trust lands.

Under Alternative B-1, the purchase of residential rights, up to one-half of the 11,055 acres estimated for rural residential growth, could be counted towards the trust lands projected share of "residential" development.

2.6.4 Alternative C - Focused Portfolio

Under this alternative, the REMB would actively evaluate the Trust Land revenue opportunities on a continual basis to determine a full range of project opportunities. The Bureau would react quickly to market opportunities and attempt to realize a higher proportion of the anticipated growth in regional markets.

2.6.4.1 Relationship to Community Growth

The projected ranges of annual growth of "rural residential" and "commercial/industrial" on Trust Lands under Alternative C are shown in Tables 2-14 and 2-15. Depending on the land office region, growth of residential, commercial, and industrial uses on Trust Land would range between 8 and 20% of the anticipated growth of those regions. These percentages are double the values reflected under Alternative B and assume that Trust Lands would experience a higher proportion (on a per acre ratio with other lands) of residential, commercial, and industrial uses.

Table 2-14. Alternative C: Growth Estimates for Rural Residential Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2003-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	2156 – 3592	1403 – 2339	1436 – 2394	1495 – 2491	6490-10816
SWLO	1200 – 2000	829 – 1381	857 – 1429	888 – 1480	3774-6290
CLO	438 – 730	847 – 1411	891 – 1485	931 – 1551	3107-5177
NELO	(24) – (40)	8 – 14	12 – 20	17 – 29	13-23
SLO	289 – 481	176 – 293	183 – 305	193 – 321	841-1400
ELO	(20) – (34)	5 - 9	12 - 20	8 - 13	5-8
Total	4039-6729	3268-5447	3391-5653	3532-5885	14230-23714

Table 2-15. Alternative C: Growth Estimates for Commercial/Industrial Acreages on Trust Lands					
Land Office Region	Growth Estimates (acres) by Time Period				
	2002-2010	2011-2015	2016-2020	2021-2025	Total
NWLO	508 – 847	336 – 559	371 – 618	410 – 683	1625-2707
SWLO	442 – 737	293 – 488	328 – 547	366 – 610	1429-2382
CLO	605 – 1009	381 – 634	430 – 716	476 – 793	1892-3152
NELO	140 – 233	111 – 185	120 – 200	133 – 221	504-839
SLO	208 – 347	138 – 230	155 – 258	173 – 288	674-1123
ELO	51 - 85	21 - 35	25 - 41	27 - 45	124-206
Total	1954-3258	1280-2131	1429-2380	1585-2640	6248-10409

2.6.4.2 Land Use Categories

Projects that return the highest net revenue to the trusts would be given higher priority under this alternative.

- Residential – A high proportion of Trust Lands suitable for development are considered to have residential land values. The REMB would attempt to realize a proportionally higher share of the residential market in growth regions of the State. Revenue would be generated by land sales, land banking, and through some cooperative development agreements with the private sector. Additional leasing opportunities would be sought through programs offered by local governments and such agencies as Fannie Mae.
- Commercial – Commercial uses on Trust Lands would be a priority objective under this alternative. Revenue opportunities would be sought through leases for new development and acquisition of existing commercial uses.
- Industrial – Under this alternative, the REMB would attempt to secure long-term leases with industries, including high-tech firms. This would require improving entitlements on certain urban lands and lands associated with extensive infrastructure systems. Opportunities would also be actively pursued on rural lands that may be suitable for resource-based industries.

Conservation – Under Alternative C, the Bureau would consider conservation opportunities as a high priority on a percentage of those Trust Lands that lie within one mile of lands with conservation values. The percentage of conservation uses on Trust Lands would correspond to the percentage share that Trust Lands have of the entire land base. Conservation use would generally be achieved through the sale of development rights on lands with residential values. However, Trust Land Acres that are placed in conservation use through the purchase of development rights would not be “counted” in the calculation of developed residential acreage for accounting purposes under Alternative C (see Chapter 4). Table 2-16 identifies the number of acres per land office area that could be considered for conservation based on this approach, over the life of the Real Estate Management Plan. The acreages presented are estimates only and do not intend to suggest a limit to the acres that could be placed in conservation use.

Table 2-16. Potential Conservation Acreage Under Alternative C			
Land Office	Trust Acres Within One Mile of Conservation Areas	Percentage of Land Base	Acres times Percentage (acres)*
NWLO	50,866.8	3.5%	1,780
SWLO	38,968.3	3.1%	1,208
CLO	176,376.3	5.5%	9,701
NELO	134,821.7	7%	9,438
SLO	19,956.5	3.7%	738
ELO	25,057.8	6.2%	1,554
Total	446,047.4		24,419
*Column represents total conservation acres through year 2025			

2.6.4.3 Location Descriptors

Under this alternative, the Bureau would explore all opportunities for increased revenue to the trusts. Target areas of opportunity would generally be associated with identified growth regions of the state and lands with medium to high suitability (see Table 2-6).

- Urban – Urban locations within growing communities would be given high priority for new income opportunities. Commercial, industrial, and residential developments would be pursued in the form of new leases on raw land or through acquisition of existing developed properties.
- Suburban – Revenue for residentially valued land would be realized through land sales, land banking, joint ventures, and other real estate practices. Most of the new revenue opportunities would be “residential”.
- Rural – Low density residential uses, recreation resorts, and resource based industrial uses would be appropriate to rural locations. Industrial uses may also be appropriate to rural locations having convenient access to travel corridors and other necessary infrastructure. Other types of commercial may also be appropriate, such as communication towers.

2.6.4.4 Project Selection & Prioritization – (Relationship to Funnel Process)

The REMB would be fully involved in project development at all levels of analysis – from the identification of lands suitable for development to project level design and evaluation. The project selection and development process would also include, in certain circumstances, the active pursuit of entitlements that would make Trust Lands more marketable including, for example, the installation of infrastructure.

2.6.4.5 Implementation Strategies

The REMB would make use of a wide range of real estate development tools in order to meet land use and revenue objectives. Bureau staff would both initiate and respond to land use proposals for a variety of uses. When appropriate, the REMB would form partnerships with other public and/or private entities to enhance those financial and human resources that may be brought to a project. For example, the REMB might work with a private developer to provide infrastructure to prepare a commercial or industrial site for leasing.

- Land Use Authorizations
 - Leases – The REMB would actively pursue additional commercial and industrial leases in areas where market conditions warrant this type of development. Leases would also be considered for high value residential properties with scenic and recreational amenities. In urban areas, the REMB would consider single family, multi-family, pre-fabricated, and mobile home residential leases.
 - Licenses – The REMB would emphasize long-term licenses with a high rate of return over short-term leases. “Walk in” requests for individual short-term leases would generally be discouraged.

- Easements – The REMB would continue to respond to requests for easements on state lands for both private and public purposes. However, those proposals that provide greater income to the Trust would be favored. Conservation easements would be difficult to convey under current legal constraints.
- Land Transactions
 - Land Banking – The REMB would use Land Banking to acquire existing properties with high revenue streams and to provide increased public access to Trust Lands. The Bureau would also use Land Banking (with proper legislative authorization) to position itself in areas of high growth, including purchasing existing developed uses in areas where Trust Lands are not well positioned to capture revenue opportunities.
 - Land Exchanges – The REMB would consider those land exchanges that would result in the acquisition of both undeveloped land and land with improvements that provide an existing income stream.
 - Land Sales – Land sales under Alternative C would be considered in conjunction with joint ventures and partnerships between the DNRC and private and/or public entities. Under this approach, the joint venture/partnerships would make physical improvements to the land and seek those land use designations that would improve overall marketability. Once the maximum entitlements are achieved, the land would be sold and the partners would share in the profits associated with the improvements. Most of the residential objectives for new residential growth would be accomplished through land sales. The Department would continue the existing residential leasing program.
- Marketing
 - Advertising – Alternative C would involve a very active marketing component. In addition to print and electronic advertising strategies, the REMB would engage in a wide-reaching aggressive campaign that might include an interactive web page to respond to inquiries and the preparation of highly produced development packets and brochures with information on available lands and leases. The REMB might also consider working with a professional marketing firm in advertising its properties through brochures, video presentations and various computer and Internet strategies.
 - Real Estate Affiliations – The REMB would work closely with local, state and national real estate and development organizations. Affiliations with these professional groups would be key in promoting state Trust Land properties. Bureau staff would be active members of local organizations and attend regional and national real estate conferences and meetings in order to promote its programs and offerings.

- RFP Process – Under Alternative C, the REMB would engage in an aggressive effort to market its lands through the RFP Process. Prior to issuance of an RFP, however, work would be done to improve land entitlements through a number of mechanisms including, but not limited to:
 - seeking appropriate zoning designations
 - arranging for and installing necessary infrastructure
 - adding amenities and enhancements
 - identifying potential public and private partners

The RFP process would include not only traditional legal notices but targeted solicitations as well.

2.6.4.6 Project Management Roles

- The Real Estate Management Bureau – Alternative C would expect the REMB to actively manage residential, conservation, industrial, and commercial uses on Trust Lands. While the REMB would continue to respond to unsolicited proposals, greater emphasis would be placed on Department initiated project development to assure the greatest revenue return.
- The Developer – The REMB would work closely with potential developers to establish project feasibility in the market place. Partnership agreements with private entities would be pursued, as appropriate, in preparing market studies, developing infrastructure and in preparing sites for construction. Under Alternative C, the Bureau would also focus on the acquisition of existing buildings. The REMB could then enter into an agreement with a project manager to expand, rehabilitate, and/or manage these properties.
- City/County Local Governments – Bureau staff would work closely with local jurisdictions in land planning and infrastructure development. Whenever possible, the REMB would seek the most advantageous policy decisions in light of revenue objectives. REMB would work cooperatively with local governments to provide infrastructure and services to Trust properties as resources and opportunities permit.

2.6.4.7 Administration

- Staffing and Staffing Expertise – Alternative C may require a substantial commitment of staff. While the Bureau would still try to share expertise among Land Offices, the level of activity may require a larger special resources staff over all. As under Alternative B, expertise would be needed in planning, real estate, appraisal, engineering, marketing, and finance. It is estimated that four additional staff may be required as compared to Alternative A.
- Funding – Additional funding may be necessary for increased staffing and project support, including costs to improve land entitlements. Additional funding sources would be sought to achieve program objectives through a development improvement fund (revolving) and a percentage share of lease

and sale revenue. Up to \$1 million per year would be sought to improve land entitlements. The economic analysis by Jackson (2004) included in Appendix D suggests that increased funding to improve land entitlements would generate a greater return to the Trust. To the extent possible, increased staffing needs would be accomplished with reassignment of vacant FTEs.

- Statutory Authority – Legislation would also be necessary to authorize a special development revolving fund and any other special funding requests. A change in the law pertaining to conservation easements would also be necessary to achieve conservation objectives.

2.6.4.8 Financial Considerations

- Revenue to the Trust – New revenue sources would primarily be from (1) land sales of unimproved residential valued properties, (2) commercial leases, (3) industrial leases, and (4) conservation licenses, leases, and easements. Residential properties (unimproved) provide the largest opportunity for new income. Leasing of residential properties following land development would be pursued to a greater extent than anticipated by the other alternatives.
- Property Tax – Under Alternative C, the property tax benefit would be attributable to beneficial use taxes associated with industrial and commercial leases and personal property taxes paid on residential improvements. In addition, it is anticipated that some residential properties would be converted to private ownership, creating additional property tax revenue for the community. Purchase of existing buildings and infrastructure for lease would have no immediate affect on the tax base. Lessees would continue to pay all real and personal property taxes. Over time, improvements made to facilities could increase the property tax benefit to the community
- Equalization Payments – There would be no appreciable change expected to county equalization receipts since lands converted to “other” remains a small percentage of the total Trust Land area. However, property tax revenue from leased and sold properties would increase for most of the central and western counties.
- Job Creation – Since Trust Lands would only be sharing in the expected growth of a community, no new jobs would actually be created. However, under this alternative, it could be assumed that Trust Lands would realize 8-20% of new development and so it could be concluded that Trust Lands would be responsible for 8-20% of the new jobs.
- Asset Management – Lands classified as “other” would not appreciably reduce the number of acres associated with the other TLMD Bureaus. Within the REMB, emphasis would be placed on those properties that are positioned well to take advantage of market growth over time. This might

include properties that are not currently in close proximity to infrastructure or that may not be appropriately zoned but would ultimately provide a favorable return. Management emphasis would shift slightly in favor of long term leases on commercial and industrial properties, management of existing developed properties acquired through land banking, and joint ventures/partnerships to develop residential lands.

2.6.4.9 Environmental Review and Public Comment

- Local Land Use Regulations – Under Alternative C, the REMB would have an ongoing, active role in local land use planning activities. However, participation in local planning processes would focus on achieving the greatest flexibility in land use authorization sought during the planning process. Bureau staff would actively participate in local government processes to develop, amend or apply growth plans, zoning designations, subdivision, annexation and development agreements or other policies or regulations where there is the possibility of increasing revenue for the trust beneficiaries. The REMB would focus its neighborhood planning processes on maximizing revenue. Local land use policies and regulatory processes would be followed.
- MEPA – All projects would be developed in compliance with MEPA. For those projects approved through the local regulatory processes, MEPA and associated analyses would largely be achieved by adhering to the local review processes. Where appropriate, the REMB would seek categorical exclusions from MEPA in cases where local land use regulations adequately evaluate (relative to the MEPA process) the impacts of a project.

2.6.5 Alternative C-1: Focused Portfolio – Conservation Priority

Alternative C-1 incorporates all of the elements of Alternative C with the exception of Conservation uses on Trust Lands. As under Alternative C, the REMB would consider conservation opportunities a priority on a percentage of those Trust Lands lying within one mile of lands with existing conservation objectives, such as lands located within National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers; Wildlife and Game Refuges, and Public/Private Conservation Easements. The REMB would strive to achieve a percentage of conservation uses on Trust Lands that would correspond to the percentage share that Trust Lands have of the entire land base. Conservation use would generally be achieved through the sale or leasing of development rights on lands with residential values. However, unlike Alternative C where no development rights purchases would apply towards the total estimated share of residential development on trust lands, (again as in Alternative B-1) up to one-half of the total estimated rural residential estimated share of 23,7114 acres could be achieved through purchase of development rights on rural lands having “residential” as the highest and best use.

2.7 DESCRIPTION OF REASONABLY FORESEEABLE FUTURE ACTIONS NOT PART OF THE PROPOSED PROGRAMMATIC PLAN BUT RELATED TO CUMULATIVE EFFECTS

The scope of a cumulative impacts analysis is guided by 75-1-208 (11), MCA. This plan would have no direct or indirect influence on growth and development of other agency lands.

Cumulative effects on other revenue-generating bureaus of the Trust Land Management Division are expected to be complementary to the overall revenue objectives for the trusts. Development on Trust Lands is expected to have negligible economic, environmental, and social impacts to the local communities since an assumption is made that Trust Lands would not be creating new development opportunities but, instead, would be responding to accommodate the anticipated growth of a community. Specific effects of new development on Trust Lands would be subject to project level evaluations through local land use regulatory review processes and MEPA. The total land area dedicated to new residential, commercial, and industrial land uses through the year 2025 is expected to be less than 1% of the total Trust Land area.

2.7.1 Agricultural Land Leasing

Revenue from agricultural leasing on Trust Lands averages around \$8 million dollars per year. Average revenue per acre for agricultural uses is approximately \$14.00. Over a period of decades, the acreage available for agricultural leasing may increase through conservation agreements and asset shifting between programs. The REMB may have an indirect influence on the amount of land available for agricultural practices through actions related to land banking and land exchanges. In some situations, residential valued lands may be exchanged or land banked to increase agricultural acreages.

2.7.2 Grazing Land Leasing

Revenue from grazing activities on Trust Lands fluctuates between \$4.5 and \$6 million dollars per year. Average revenue per acre for grazing is approximately \$1.25. Over a period of decades, the acreage available for grazing leasing may decrease through asset shifting between programs. The Bureau may have an indirect influence on the amount of land available for grazing through actions related to land banking and land exchanges. In some situations, grazing lands may be exchanged or land banked to increase acreage for higher income property.

2.7.3 Forest Product Sales

Revenues from timber sales on Trust Lands fluctuate significantly between years, ranging \$6 to \$10 million per year. Average revenue per acre of total forest classified lands is approximately \$7.00. Over a period of decades, the acreage available for timber sales may increase through asset shifting between programs. Bureau activities may have an indirect influence on the amount of land available for timber management through actions related to land banking and land exchanges. In some situations, grazing lands may be exchanged or land banked to increase acreage for forested lands. In other situations, forested lands may have a higher and better use for residential purposes so land available for timber sales may slightly decrease. As suggested in each of the five alternatives, the option to purchase residential development rights on forested lands would secure long-term opportunities for forest management.

2.7.4 Mineral, Oil, Gas Leasing

No significant cumulative impacts to the Minerals Management Bureau are expected with implementation of the real estate management program. The potential impacts to the subsurface mineral rights are evaluated in all situations involving decisions that might affect the long-term disposition of Trust Lands through sale, exchange, or easement. Subsurface rights can be protected, when desirable, by partial conveyance of only the surface rights. Lands considered to be valuable for mineral deposits cannot be sold (77-2-303, MCA).

2.7.5 Recreation

Legally accessible Trust Lands are open to recreational use. This use has been authorized under a general recreational use license since 1990. Since the inception of the program, the revenues have increased from less than \$50,000 annually to \$405,700 in fiscal year 1998 and \$558,000 in fiscal year 2003.

In the 2003 legislative session, Senate Bill 130 passed authorizing compensation for hunting, fishing and trapping through an agreement with the Department of Fish Wildlife and Parks whereby FW&P compensates the trust for each conservation license sold, beginning March 2004. Revenues are expected to increase to over \$900,000 as a result of this agreement. All other recreational use activities will continue to be authorized under the general recreational use license.

Over the next several decades, some land asset shifting would occur as a result of land sales, land exchanges, and land banking. Through this process, it is expected that the acreages for classified "forest", "other", and "agriculture" would increase with a decrease in classified grazing lands. The public may notice that access to some well-known "neighborhood" Trust Lands may be lost with change of ownership but on an overall basis, total acreage of Trust Lands available for casual recreation is either not expected to decrease or decrease only slightly.

2.8 SUMMARY COMPARISON OF THE EFFECTS OF ALL ALTERNATIVES ON THE PROJECT OBJECTIVES AND ON THE RELEVANT ENVIRONMENTAL FACTORS

The alternatives consider growth options for "commercial", "conservation", "industrial", and "residential" on school Trust Lands. In each alternative, an assumption is made that Trust Lands would share (not create) expected future growth. It is assumed that the expected growth would occur regardless; and that certain Trust Lands may actually be suitable and capable of capturing some of that expected growth. In certain situations, it could be argued that development of some Trust Lands may be more environmentally appropriate than development of non-Trust Lands. This would be the situation if development activities were forced to "leap" beyond Trust Lands to meet local development demands or if Trust Lands were better positioned for development due to favorable topography, location, and access to infrastructure. The only clear distinction of impacts relates to the management objectives of the TLMD and revenue parameters. For example, it can be assumed that increased development (including conservation) on Trust Lands would generate more revenue to the trust beneficiaries and more taxes (property and personal) to local and state agencies. However, development on Trust Lands does not necessarily create new jobs since the development would occur anyway. Under each of the alternatives, new development potential on Trust Lands never exceeds 1% of the total Trust Land acreage through the year 2025. The percentage share of development is even less significant when considered in the context of the entire acreage (all landowners). Table 2-17 attempts to summarize the management and environmental distinctions between alternatives without consideration of the broader context of land use development on non-Trust Lands.

Table 2-17. Summary Comparison of Effects						
		Alternatives				
		A	B	B-1	C	C-1
Growth By Land Use Type						
	Residential	+	++	+	+++	++
	Commercial	+	++	++	+++	+++
	Industrial	O	+	+	+	+
	Conservation	+	+	++	+	+++
Growth By Location						
	Urban	O	+	+	++	++
	Suburban	O	+	+	++	++
	Rural	O	+	O	++	+
Project Selection by DNRC						
	Reactive	O	+	+	+	+
	Proactive	O	+	+	++	++
Real Estate Tools						
	Leases	O	+	+	++	++
	Licenses	O	+	+	+	+
	Easements	O	+	+	+	+
	Land Banking	O	+	+	++	++
	Land Exchanges	O	+	+	++	++
	Land Sales	O	+	+	+	+
	Joint Ventures	O	+	+	++	++
	Marketing	O	+	+	++	++
	Property Purchases	O	+	+	++	++
Project Management Roles						
	DNRC	O	+	+	++	++
	Developer	O	+	+	+	+
	Local Government	O	+	+	+	+
	Partnerships	O	+	+	++	++
Administrative Support						
	Staffing	O	+	+	++	++
	Funding	O	+	+	++	++
	Statutory Authorizations	O	+	+	+	+
Financial						
	Revenue to Trust	+	++	+	+++	++
	Tax Revenue	+	++	+	+++	++
	PILT	O	O	O	O	O
	Job Creation	O	+	O	++	+
	Asset Management	O	+	+	++	++
Environmental Review						
	Local Land Use Regulations	+	+	+	+	+
	MEPA	+	+	+	+	+
Environmental Affects						
	Geology & Soil	O	+	+	+	+

Table 2-17. Summary Comparison of Effects						
		Alternatives				
		A	B	B-1	C	C-1
	Water Resources	O	O	O	O	O
	Fisheries	O	O	O	O	O
	Wildlife	O	+	+	+	+
	Vegetation	O	+	+	+	+
	Air Quality	O	+	+	+	+
	Noise	O	+	+	+	+
	Aesthetics	O	O	O	O	O
	Cultural	O	O	O	O	O
	Community Infrastructure	O	O	O	O	O
	Taxes	O	+	+	++	++
Note: O = current condition; + = elevated and relative impact from current condition						

2.9 PREDICTED ATTAINMENT OF PROJECT OBJECTIVES BY ALTERNATIVE

2.9.1 Objective 1 – Generate increased revenue for Trust beneficiaries greater than current levels

Revenue generation associated with each alternative is expressed relative to the status quo (Alternative A). Under all five alternatives, however revenue to the Trust is expected to grow.

2.9.1.1 Alternative A: Current Program

Under Alternative A, the Bureau would continue to manage its lands at the current level of activity, or at a rate that is less than market share. The study by Jackson (2004) included in Appendix D suggests that Alternative A would generate an annual rate of return of approximately 2.13%.

2.9.1.2 Alternative B: Diversified Portfolio

Under Alternative B, the Real Estate Management Bureau would develop trust lands in direct proportion to the percentage that state lands have of the entire developable land base within each land office region. The study by Jackson (2004) included in Appendix D suggests that Alternative B would generate an annual rate of return of approximately 4.66-5.13%, with the higher rate of return resulting from improved land entitlements achieved through the expenditure of up to 500,000 per year for those purposes.

2.9.1.3 Alternative B-1: Diversified Portfolio – Conservation Priority

Under Alternative B-1, the Real Estate Management Bureau would develop commercial and industrial uses on trust lands in direct proportion to the regional market. However, residential development on trust lands would be comparable to Alternative A and the replacement income would be less from the substituted conservation “sales”. As such, the overall expected revenue and rate of return should fall somewhere between those of Alternative A and Alternative B.

2.9.1.4 Alternative C: Focused Portfolio

Under Alternative C, the Bureau would develop trust lands at a rate proportional higher than other lands in the region. The study by Jackson (2004) included in Appendix D suggests that Alternative C would generate an annual rate of return of approximately 5.48-6.35%, with the higher rate of return resulting from improved land entitlements achieved through the expenditure of up to \$1 million per year for those purposes

2.9.1.5 Alternative C-1: Focused Portfolio – Conservation Priority

Under Alternative C-1, the Real Estate Management Bureau would develop commercial and industrial uses on trust lands at a rate proportionally higher than other lands in the area. However, residential development on trust lands would be comparable to Alternative B and the replacement income would be less from the substituted conservation “sales”. As such, the overall expected revenue and rate of return should fall somewhere between those of Alternative B and Alternative C.

2.9.2 Objective 2 – Comply with the Montana Environmental Policy Act (MEPA) requirement for developing a programmatic plan, DNRC's administrative procedures regarding MEPA (ARM 36.2 537) and the Montana Antiquities Act (MCA 22-3-424), in their most current form.

Environmental impacts associated with residential, commercial and industrial development in communities are cumulative. Developments on school Trust Lands would contribute to those cumulative impacts. However, these impacts would occur regardless of whether the development occurs on state lands or elsewhere in the community. In addition, unlike developments on private lands, real estate activities on trust lands are subject to review under MEPA and the Montana Antiquities Act. The REMB would strive to comply with MEPA and Montana Antiquities Act responsibilities under all five alternatives. However, the manner in which requirements are addressed does vary by alternative, reflecting the associated management approach. Refer to relevant discussions in Chapter 5.

2.9.2.1 Alternative A: Current Program

Under Alternative A, the REMB would continue to comply with MEPA requirements using the Act as the principal framework for environmental review. In addition, projects would be reviewed with respect to their impact on historic and cultural resources. In general, categorical exclusions or exemptions would not be sought as DNRC has limited staffing and budgets in most cases to initiate a project that would result in a subdivision. The lessee would be responsible for compliance with all applicable regulations. In addition, the Bureau would work to coordinate public involvement requirements under MEPA with local public processes. However, the MEPA analysis, in large measure, would be undertaken at a Bureau rather than community level.

2.9.2.2 Alternatives B: Diversified Portfolio and B-1: Diversified Portfolio – Conservation Priority

Under Alternatives B and B-1 the REMB would meet the Department's responsibilities under MEPA through its adherence to local land use regulation wherever possible. Where appropriate, the REMB would utilize categorical exclusions from MEPA documentation in cases where local land use regulations and procedural requirements surpass MEPA's analysis requirements. Any requirements not met through local land use policy and regulatory processes would be fulfilled directly through MEPA

compliance. For example, site-specific socio-economic studies and cultural impact assessments required under the Montana Antiquities Act, would be undertaken for every qualifying project, regardless of whether the assessments are required locally.

2.9.2.3 Alternatives C: Focused Portfolio and C-1: Focused Portfolio – Conservation Priority

Under Alternatives C and C-1 the Bureau would evaluate the Department's compliance responsibilities with respect to both MEPA (and the Antiquities Act) and local land use policy and regulation. Under this alternative, the Bureau would likely utilize categorical exclusions whenever it would reduce duplication of development review and enable the REMB to remain competitive by being able to take the greatest advantage of timely opportunities.

2.9.3 Objective 3 – Provide a more effective and efficient decision-making framework for real estate management that includes a strategic vision and philosophy for future management.

2.9.3.1 Alternative A: Current Program

Alternative A, the status quo, would continue a program that responds to opportunities as time, funding, and expertise permit. The ability to respond to opportunities in a timely manner would be severely limited. Further, given the limits of interaction with local governments due to limited staff and level of project development under this alternative, project outcomes may be less certain than under the action alternatives. Also, under Alternative A, it would be difficult to predict a revenue stream over time. The ability to generate revenue for the trust would be dependent on available resources and often would be driven by outside interest rather than Departmental priorities.

2.9.3.2 Alternatives B: Diversified Portfolio and B-1: Diversified Portfolio – Conservation Priority

Under Alternatives B and B-1, the REMB would be directly involved with community planning efforts and therefore able to coordinate its project development and review processes with those of local planning and development authorities. This would help to streamline project approval processes as well as make project planning outcomes more predictable. This alternative would also enable the Bureau to be more active in defining and implementing priority real estate projects over a period of time, which in turn would allow for allocations of resources as needed to meet revenue objectives.

2.9.3.3 Alternatives C: Focused Portfolio and C-1: Focused Portfolio – Conservation Priority

Alternatives C and C-1 offer the most efficient decision making framework for real estate management. While the REMB would continue to work with local governments, it would evaluate its approach to project design and review processes with respect to a goal to develop real estate at a more rapid rate. The Bureau would also be able to expedite project development through collaborations and partnerships with other private and public interests to achieve its goals.

2.9.4 Objective 4 – Simplify the project level evaluation process.

The establishment of the funnel filter approach in identifying lands suitable for development would simplify the project evaluation process, to some extent, under all the

action alternatives. However, the funnel approach still emphasizes compliance with all applicable local, state, and federal laws, including adherence to local land use regulations. The funnel and project selection processes described earlier in this chapter provide a more structured and predictable methodology for guiding decisions of the REMB.

2.9.4.1 Alternative A: Current Program

Under the current program, the REMB would strive to improve its evaluation process, but would continue to use a course filter analysis in the near term. Ultimately, a funnel filter analysis would enable the Bureau to identify, at a gross level, the lands which would be suitable for development. However, since the management of real estate would be largely driven by inquiries and proposals from outside the Department, it is unlikely that more site specific analyses could be undertaken in advance of project proposals. Projects would be evaluated on a more "ad hoc" basis rather than being derived from a more formal decision-making process.

2.9.4.2 Alternatives B: Diversified Portfolio and B-1: Diversified Portfolio – Conservation Priority

Alternatives B and B-1 would enable the REMB to undertake a more systematic approach to determining those lands that were suitable for development. It would allow the Bureau to focus on those lands that are identified as "transitional" and determine their potential for residential, commercial and industrial development. Under Alternatives B and B-1, the Department would work closely with local government regulatory processes to facilitate a more simplified project level review. Further, a number of local and state compliance related activities could be conducted simultaneously to save time and resources.

2.9.4.3 Alternatives C: Focused Portfolio and C-1: Focused Portfolio – Conservation Priority

Under Alternatives C and C-1 the REMB would actively make use of those strategies that simplified project level review in order to take advantage of timely opportunities in the market place. In addition to striving for simultaneous and expedited review procedures, the Bureau would be more proactive in seeking favorable land use entitlements for trust lands.

2.9.5 Objective 5 – Protect the long-term viability of Trust Land for uses other than agriculture, grazing and timber.

As trust managers, the Trust Land Management Division of DNRC is first and foremost an asset management organization. Whereas the division has historically managed for natural resource extraction, the data supports broadening those land-use activities to include uses that generate greater revenue per acre. Invariably, that means rearranging the asset portfolio from one that is overly reliant on grazing and acquiring or developing lands that have the potential for commercial, residential, and conservation opportunities. The vast majority of Trust Lands will continue to be managed for historical uses well into the future and only those lands that are positioned well for real estate opportunities will be reclassified to "other" and only as market conditions permit.

2.9.5.1 Alternative A – Current Program

This alternative does not anticipate full participation in market forces related to future growth and development of residential, commercial, and industrial uses. However,

internal processes are in-place (project selection process) to ensure proper identification and selection of properties suitable for these purposes. The majority of Trust Lands would remain suitable for natural resource management and some portion thereof would be available in the future for additional land use opportunities. No acreage restrictions are proposed for lands with conservation values.

2.9.5.2 Alternative B: Diversified Portfolio

This alternative anticipates that Trust Lands would receive a pro-rata share of future growth within a particular region of the state. The proportion of expected growth would remain insignificant (<1%) on Trust Lands through the year 2025. Internal and external project review processes would ensure that only those lands suitable for the intended purposes would be developed. The majority of Trust Lands would remain suitable for natural resource management and some portion thereof would be available in the future for additional land use opportunities.

2.9.5.3 Alternative B-1: Diversified Portfolio – Conservation Priority

The purchase of development rights on Trust Land for conservation purposes will typically include a provision that will enable the ongoing management of natural resources. The management of timber and agricultural resources are quite compatible with conservation objectives related to open space and habitat and watershed protection.

2.9.5.4 Alternative C: Focused Portfolio

This alternative anticipates that Trust Lands would receive a proportionally higher share (as compared to other land ownership categories) of future growth within a particular region of the state. The proportion of expected growth would remain insignificant (<1%) on Trust Lands through the year 2025. Internal and external project review processes would ensure that only those lands suitable for the intended purposes would be developed. The majority of Trust Lands would remain suitable for natural resource management and some portion thereof would be available in the future for additional land use opportunities.

2.9.5.5 Alternative C-1: Focused Portfolio – Conservation Priority

As noted under Alternative B-1, the purchase of residential development rights on Trust Land for conservation purposes will typically include a provision that will enable the ongoing management of natural resources. The management of timber and agricultural resources are quite compatible with conservation objectives related to open space and habitat and watershed protection.

2.9.6 Objective 6 – Provide an opportunity for public involvement in decisions affecting residential, commercial, industrial and conservation uses.

The Bureau would, in most cases, would address a substantial portion of its public involvement responsibilities normally expected under the Montana Environmental Policy Act (MEPA) through adherence to local land use policy and regulatory process under all five alternatives. Local growth policies (comprehensive plans) and their associated neighborhood plans require an extensive public involvement process under 76-1-602, MCA. The creation of a zoning district requires public involvement both in the initiation and approval processes. A local public hearing is also required for the review of a preliminary plat under the Montana Subdivision Act (76-3-605, MCA). Refer to related discussions in Chapter 5.

2.9.6.1 Alternative A: Current Program

While the REMB would comply with all land use regulatory process at the local level under Alternative A, efforts to involve the public more extensively would be minimal. Involvement in local land use policy decision making would be confined to particular regulatory approvals required at the project level.

2.9.6.2 Alternatives B: Diversified Portfolio and B-1: Diversified Portfolio – Conservation Priority

Alternatives B and B-1 would provide for the most extensive opportunities for public involvement in decisions affecting the management of special uses, through its ongoing involvement with local government planning activities and its adherence to local land use regulatory processes well as MEPA.

2.9.6.3 Alternative C: Focused Portfolio and C-1: Focused Portfolio – Conservation Priority

Under Alternatives C and C-1, public involvement would be similar to Alternatives B and B-1.

2.9.7 Objective 7 – Identify ways to work more closely with local government processes and policies

2.9.7.1 Alternative A: Current Program

Under Alternative A, the REMB would generally not be an active participant in the local government process. Any relationships to these processes would be largely project driven. Little effort would be spent in participating in comprehensive community planning processes or in the preparation of neighborhood plans. The Bureau would work to remain informed of local policy development and its potential impact on state lands. However, they would not, for the most part, actively engage in the formulation of policies and regulations related to land use.

2.9.7.2 Alternatives B: Diversified Portfolio and B-1: Diversified Portfolio – Conservation Priority

Under these alternatives, the REMB would work with local governing bodies to identify ways to promote real estate development within the framework of local policies and regulatory processes. From time to time, Bureau staff would participate in discussions at the local level regarding policy formulation and work to coordinate its planning processes with those of the local governments, particularly when such activities would enhance revenue opportunities. The Bureau would work with local officials in order to make sure the necessary entitlements were in place in order to realize the development potential of those lands identified through the filtration process as described in this chapter. However, in general, the REMB would make every attempt to follow existing policies and regulatory processes.

2.9.7.3 Alternatives C: Focused Portfolio and C-1: Focused Portfolio – Conservation Priority

Under these alternatives, the REMB would have an ongoing, active role in local government activities. Participation would focus on achieving the greatest flexibility in

land use authorization. REMB staff would actively participate in local government processes to develop, amend or apply growth plans, zoning designations, subdivision, annexation and development agreements or other policies or regulations where there is the possibility of increasing revenue for the trust beneficiaries. The Bureau would focus its neighborhood planning processes on maximizing revenue opportunities. The REMB would make every effort to follow local policies and regulatory processes, including those processes related to plan amendments, zone changes, and the like.

2.9.8 Summary Table of Predicted Attainment of Objectives

Table 2-18 depicts the degree to which each Alternative Meets Project Objectives

Table 2-18. Summary of Predicted Attainment of Objectives					
Objective	A	B	B1	C	C1
Objective 1	+	++	+	+++	++
Objective 2	+	+	+	+	+
Objective 3	O	+	+	+	+
Objective 4	O	+	+	+	+
Objective 5	O	+	+	+	+
Objective 6	O	+	+	+	+
Objective 7	O	+	+	++	++

Note: "O" indicates a status quo relationship and + indicates a strong relationship

2.10 RELATIONSHIP OF ALTERNATIVES TO ISSUES RAISED IN THE SCOPING PROCESS

Based on comments received and on prior experience with the administration of the Real Estate Management Bureau, the DNRC staff identified the following issues for evaluation in this PEIS:

1. In order to meet its fiduciary responsibilities to the beneficiaries, the DNRC must increase revenue associated with the management of commercial, industrial, residential and conservation uses on Trust Lands.
2. The REMB is managing land uses in a reactive manner without the benefit of well-defined planning process or decision making framework.
3. The REMB currently lacks a methodology for determining the suitability of land for the development of the various uses under its jurisdiction.
4. A successful real estate program will rely on a close association with local land use planning and regulatory processes.
5. The relationship of the statutory requirements under MEPA to the selection and development of projects on Trust Lands is unclear.
6. There is a need to identify opportunities for Categorical Exclusions (CE's), as provided under MEPA, consistent with the purpose for development of a programmatic plan (ARM 36.2.522(5))
7. The REMB requires guidance in addressing the growth inducing impacts of development of commercial, residential and industrial uses on Trust Land
8. The REMB requires guidance in addressing the impacts of growth with respect to transportation, air quality, noise, and other environmental concerns.

9. The REMB requires guidance in addressing open space and wildlife habitat needs while providing income for trust beneficiaries.

Table 2-19 summarizes how these issues are reflected in the design of the alternatives presented in this chapter.

Table 2-19. Issues As Addressed by Alternatives							
Issue #	Alternatives					Document Reference by Section	Supportive Statement
	A	B	B-1	C	C-1		
1	O	++	+	+++	++	2.3, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.9.1, 3.2.3, 3.2.4, 3.2.5, 4.1.3, 4.2.3, 4.2.4	All action alternatives provide for increased revenue to the beneficiaries. Increased revenue is linked to market share of residential, commercial, and industrial uses.
2	O	+	+	+	+	2.1, 2.3.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2	The funnel filter analysis and project selection process provide a framework for decision-making for all action alternatives. All alternatives require compliance with local land use regulatory processes.
3	O	+	+	+	+	2.1, 2.3.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2	The funnel filter process includes a landscape assessment of general land suitability and a demographic and market analysis to link growth objectives to regional market conditions. Other layers of the filter process are project level evaluations that help to further narrow land use options.
4	O	+	+	++	++	2.3.1, 2.6 (all subsections), 3.2.4, 3.2.6, 4.1, 4.1.3, 4.2.5, 4.2.6, 4.2.7, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 4.2.15, 4.3, 5.2, 5.3	An underlying premise of all alternatives, including the current program is that the REMB would work with local government land planning and regulatory processes.
5	O	+	+	+	+	2.3.1, 2.6 (all subsections), 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3, 5.3	Under all the action alternatives, potential and proposed projects will be subject to a well-defined funnel filtration process that will address a variety of site suitability issues. Through local land use regulatory processes, the REMB will meet a substantial portion of its responsibility under MEPA.
6	O	+	+	++	++	2.3.1, 2.6 (all subsections), 3.2.4, 3.2.6, 4.1, 4.1.3, 4.2.5, 4.2.6, 4.2.7, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 4.2.15, 4.3, 5.1	Compliance with local land use regulatory processes will, in certain cases, address all of the Department's responsibilities under MEPA and support rationale for certain categorical exclusions.
7	O	++	++	++	++	2.3.1, 2.6 (all subsections), 2.9.3,	An underlying assumption is that Trust Lands will share in expected community growth. The

Table 2-19. Issues As Addressed by Alternatives

Issue #	Alternatives					Document Reference by Section	Supportive Statement
	A	B	B-1	C	C-1		
						2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3	funnel filter analysis provides a framework for decision-making for all action alternatives regarding growth inducing impacts, such as sprawl.
8	O	+	+	+	+	2.3.1, 2.6 (all subsections), 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3	The funnel filter analysis provides a framework for decision-making for all action alternatives with respect to overall environmental concerns.
9	O	+	+	+	+	2.3.1, 2.6 (all subsections), 2.9.3, 2.9.4, 3.2.4, 3.2.6, 3.4.4, 4.1.1, 4.1.3, 4.2.2, 5.2, 5.3	The funnel filter analysis provides a framework for decision-making for all action alternatives with respect to wildlife and habitat protection. Coordination between the HCP and the SFLMP is also anticipated.

Note: "O" indicates a status quo relationship and + indicates a stronger relationship.

2.11 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

No preferred alternative is identified by this DEIS.

Chapter 3

The Affected Environment

Introduction and Purpose of the Chapter

Chapter 3 of this Draft Programmatic Environmental Impact Statement (PEIS) describes the environment that would be affected by each of the alternatives. The Chapter places the project area within the context of statewide conditions related to the physical, social, and natural environments. A description of Trust Lands includes topics related to acreage, location, purpose, management objectives, and physical and biological features.

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3.1 INTRODUCTION

The TLMD of DNRC is charged with the administration of Montana's nearly 5.2 million surface and 6.2 million mineral acres of Trust Land on behalf of various beneficiaries including public schools and universities and other state institutions. Six land office regions across the state facilitate local management of the Trust Lands. The TLMD is comprised of four bureaus that manage agriculture and grazing, forest resources, minerals, and real estate. The REMB is responsible for the development and management of residential, commercial, industrial and conservation uses and for the real estate management functions associated with land transactions on behalf of the entire Division.

The REMB currently operates and will continue to operate in the context of state and regional growth and with consideration to the natural environment. This EIS is intended to identify alternative approaches to the management of the REMB by providing programmatic guidance to decision-making for real estate activities on Trust Lands. Understanding the status quo – the current level of operations and the current environmental conditions – will help determine how the REMB would make real estate decisions into the future. This chapter describes the existing environment under the following categories:

- The Trust Land Management Division
- The Physical and Biological Environment
- The Cultural, Social and Aesthetic Environment

This information provides a baseline to compare environmental changes that might occur under each alternative. Environmental impacts associated with residential, commercial and industrial development in communities are cumulative and correspond to economic growth over time. Developments occurring on Trust Lands will represent a share of overall community growth and therefore will contribute to those cumulative impacts. These impacts will occur regardless of whether the development occurs on state lands or elsewhere in the community. Unlike developments on private lands, however, proposed uses on Trust Lands are subject to MEPA review. As a result, in some cases, the state may be required to mitigate certain impacts to a greater degree than would a private property owner.

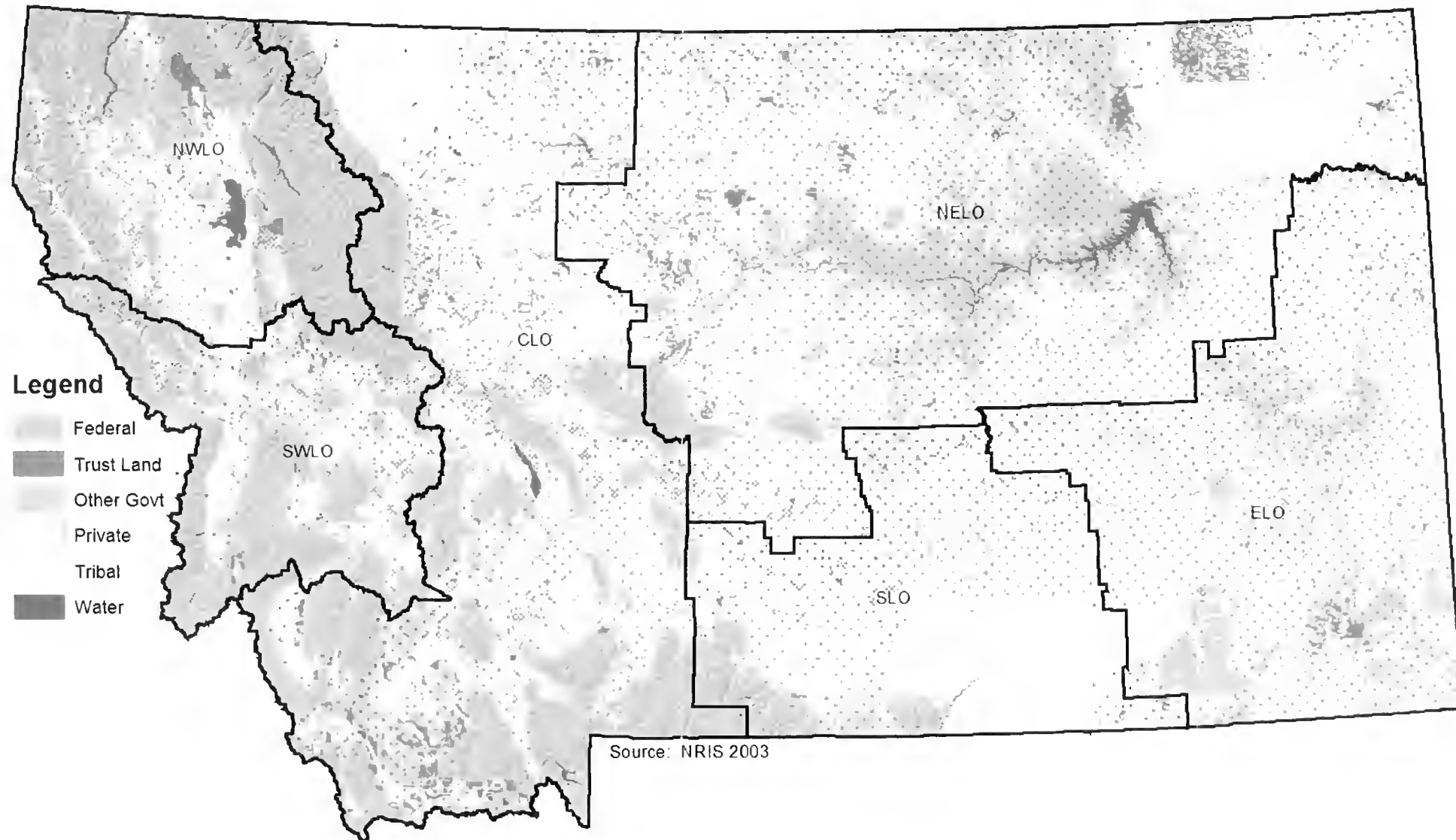
3.2 DESCRIPTION OF RELEVANT RESOURCES RELATED TO THE TRUST LAND MANAGEMENT DIVISION

3.2.1 Statewide Relationships

This section presents information regarding Trust Lands and their relationship to the state of Montana as a whole. Given that the Department intends to share in statewide economic growth (to the extent determined by the chosen alternative), it is important to understand the nature of the existing REMB program in the context of statewide demographic and economic information. A generalized ownership map of Montana (Map Exhibit 3-1) is shown on the following page. Secondly, the alternatives presented in Chapter 2 have been developed with respect to the Trust Land's share of the entire land base. Therefore, this section includes an analysis of land ownership and land coverage characteristics statewide. Appendix F displays a series of maps depicting the relationship of existing developed uses to trust lands.

Map Exhibit 3-1. Land Ownership Map of Montana

Montana Land Ownership



3.2.1.1 Demographics and Economics

Montana is a large, sparsely populated state of 917,621 (2003 estimate). Of the total population, 23.8% are under age 18 and 13.5% are over age 65. There are 237,407 housing units in the state (2002 data). Montana's economy has historically depended on natural resource-linked industries. The open plains of central and eastern Montana provide land for grain farming, grazing for large herds of beef cattle, oil and gas fields and rich coal deposits. The mountainous regions of western Montana yield timber for wood products manufacturing and minerals for mining. However, in recent years the state has relied less on its natural resources, and more on its service-producing jobs (consisting of both high and low wage employment). Tourism (with predominantly low-wage jobs) is becoming more important to the state's economy. Small businesses are very important to Montana's economy. Recent Montana Department of Labor and Industry employment data shows that about 41 percent of the state's wage and salary jobs are with firms employing fewer than 20 people—and about 75 percent are with businesses employing fewer than 100 people. Table 3-1 provides summary information regarding Montana's economy.

Table 3-1. Montana State-Wide Economic Information	
Total Personal Income (2002)	\$22,650,394,000
Total Farm Income	\$255,816,000
Total Non-Farm Income	\$22,394,578,000
Per Capita Personal income (2002)	\$24,906
Median Household Income (2002)	\$33,900
Median family income in 1999 (2000)	\$40,487
Private nonfarm establishments (2001)	32,294
Private nonfarm employment (2001)	301,460
Non-employer establishments (2001)	71,298

Source: Montana Census and Economic Information Center, Bureau of Business & Economic Research

New construction in the state has been primarily concentrated in the residential market. Residential construction in the state increased by 32.8% between 2001 and 2003 while the number of commercial and industrial properties constructed declined by about 7%. The total number of new residential and commercial/industrial properties built across the state between 2001 and the present is shown in Table 3-2. During the same time period, new development of Trust lands included 40 residential lots and 3 commercial leases.

Table 3-2. Residential and Commercial Building Activity in Montana (2001-2004)		
Year	Total Residential Units built	Total Commercial/Industrial Permits Issued
2001	2,446	1,184
2002	3,618	1,119
2003	3,645	1,103
2004 to date	187 (January)	151 (March)

Source: Montana Department of Labor and Industry, U.S. Census

Existing economic and demographic information and trends for each of the six DNRC land offices has been prepared by the by Polzin (2004) and is included in Appendix B. In summary, economic conditions in the land office regions were measured using three indicators; population, per capita income, and nonfarm labor income. These variables reflect different aspects of the local economy and together provide a comprehensive overview of general conditions. The Regional Economic Information System of the U.S. Bureau of Economic Analysis provided most of the data provided. Tables 3-3 (A-G) provide a summary of the information by land office and statewide.

Table 3-3A
Selected Economic Indicators

	Northwestern Land Office					Annual Percent Change			
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00	1995-00
Population	79,485	97,653	106,772	123,080	130,439	2.1	0.9	2.0	1.2
Per Capita Income (2000\$)	13,100	16,795	18,554	18,763	20,732	2.5	1.0	1.1	2.0
Percent of MT	88.9	91.1	94.1	92.0	92.1				
Nonfarm Labor Income (thous. of 2000\$)	765,602	1,068,923	1,204,892	1,412,535	1,672,155	3.4	1.2	3.3	3.4
Basic Industry Labor Income									
Agriculture	34,318	17,881	14,848	4,217	4,064	-6.3	-1.8	-12.2	-0.7
Ag. Serv. And Forestry	6,476	7,230	13,165	13,158	20,036	1.1	6.2	4.3	8.8
Mining	12,992	16,038	28,986	7,891	8,503	2.1	6.1	-11.5	1.5
Manufacturing	196,520	268,720	255,288	229,490	250,455	3.2	-0.5	-0.2	1.8
Transportation	42,955	58,056	56,202	53,383	59,689	3.1	-0.3	0.6	2.3
Nonresident Travel	16,851	40,589	34,149	40,964	61,509	9.2	-1.7	6.1	8.5
Federal Gov't	55,248	89,554	91,231	95,293	104,525	4.9	0.2	1.4	1.9

Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Table 3-3B
Selected Economic Indicators

	Southwestern Land Office					Annual Percent Change			
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00	1995-00
Population	143,204	162,511	160,893	180,759	190,162	1.3	-0.1	1.7	1.0
Per Capita Income (2000\$)	13,529	17,655	19,152	19,960	22,109	2.7	0.8	1.4	2.1
Percent of MT	91.8	95.8	97.1	97.9	98.2				
Nonfarm Labor Income (thous. of 2000\$)	1,463,833	2,006,534	1,960,435	2,360,286	2,823,375	3.2	-0.2	3.7	3.6
Basic Industry Labor Income									
Agriculture	27,808	12,578	13,173	168	5,193	-7.6	0.5	-8.9	98.7
Ag. Serv. And Forestry	7,963	6,657	16,052	14,896	24,898	-1.8	9.2	4.5	10.8
Mining	160,476	111,560	42,163	55,805	25,372	-3.6	-9.3	-5.0	-14.6
Manufacturing	216,951	277,946	224,579	199,482	217,423	2.5	-2.1	-0.3	1.7
Transportation	87,114	106,579	94,152	111,728	116,256	2.0	-1.2	2.1	0.8
Nonresident Travel	31,873	53,419	34,829	58,188	48,244	5.3	-4.2	3.3	-3.7
Federal Gov't	110,659	150,722	141,860	147,061	173,118	3.1	-0.6	2.0	3.3

Sources: U.S.Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Table 3-3C
Selected Economic Indicators

	Central Land Office					Annual Percent Change			
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00	1995-00
Population	214,890	238,074	250,584	275,944	285,863	1.0	0.5	1.3	0.7
Per Capita Income (2000\$)	15,468	19,049	20,424	21,200	23,351	2.1	0.7	1.3	2.0
Percent of MT	105.0	103.3	103.6	104.0	103.7				
Nonfarm Labor Income (thous. of 2000\$)	2,232,40	2,311,647	3,131,671	3,726,427	4,356,531	3.4	0.1	3.4	3.2
Basic Industry Labor Income									
Agriculture	329,474	98,344	206,293	139,077	105,790	-11.4	7.7	-6.5	-5.3
Ag. Serv. And Forestry	9,171	11,907	20,234	23,950	34,902	2.6	5.4	5.6	7.8
Mining	22,581	79,647	66,126	76,090	55,358	13.4	-1.8	-1.8	-6.2
Manufacturing	142,337	161,270	107,924	142,133	171,067	1.3	-3.9	4.7	3.8
Transportation	116,252	152,050	85,741	93,034	103,875	2.7	-5.6	1.9	2.2
Nonresident Travel	65,474	118,101	117,653	161,868	183,275	6.1	0.0	4.5	2.5
Federal Gov't	367,549	406,083	452,003	456,238	482,758	1.0	1.1	0.7	1.1

Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Table 3-3D
Selected Economic Indicators

	Northeastern Land Office					Annual Percent Change		
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00
Population	90,855	89,581	82,917	83,463	79,706	-0.1	-0.8	-0.4
Per Capita Income (2000\$)	15,707	16,305	18,642	19,028	20,365	0.4	1.3	0.9
Percent of MT	106.6	88.5	94.6	93.3	90.4			1.4
Nonfarm Labor Income (thous. of 2000\$)	635,569	845,835	735,902	743,815	780,866	2.9	-1.4	0.6
Basic Industry Labor Income								1.0
Agriculture	395,819	72,354	199,634	151,084	138,525	-15.6	10.7	-3.6
Ag. Serv. And Forestry	6,939	6,538	10,775	12,809	16,684	-0.6	5.1	4.5
Mining	6,329	39,595	35,221	22,007	11,993	20.1	-1.2	-10.2
Manufacturing	30,524	23,089	23,140	15,786	14,741	-2.8	0.0	-4.4
Transportation	56,069	90,548	67,490	53,171	54,291	4.9	-2.9	-2.2
Nonresident Travel	11,086	18,571	13,679	15,751	16,486	5.3	-3.0	1.9
Federal Gov't	64,207	58,218	64,078	65,328	71,079	-1.0	1.0	1.0
								1.7

Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Table 3-3E
Selected Economic Indicators

	Southern Land Office					Annual Percent Change			
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00	1995-00
Population	117,436	142,056	147,638	162,490	168,992		1.9	0.4	1.4
Per Capita Income (2000\$)	15,344	20,460	21,007	21,876	24,405		2.9	0.3	1.5
Percent of MT	104.1	111.0	106.5	107.3	108.4				2.2
Nonfarm Labor Income (thous. of 2000\$)	1,230,581	2,100,952	2,019,201	2,386,938	2,805,903	5.5	-0.4	3.3	3.3
Basic Industry Labor Income									
Agriculture	163,177	40,730	62,943	33,911	30,621	-13.0	4.4	-7.0	-2.0
Ag. Serv. And Forestry	8,077	10,026	22,914	20,242	29,414	2.2	8.6	2.5	7.8
Mining	28,154	128,673	85,197	101,561	139,836	16.4	-4.0	5.1	6.6
Manufacturing	127,508	170,464	110,001	132,952	144,438	2.9	-4.3	2.8	1.7
Transportation	28,093	47,601	30,445	27,111	30,976	5.4	-4.4	0.2	2.7
Nonresident Travel	31,707	54,132	28,115	45,873	46,358	5.5	-6.3	5.1	0.2
Federal Gov't	79,951	111,726	141,324	154,898	175,075	3.4	2.4	2.2	2.5

Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Table 3-3F
Selected Economic Indicators

	Eastern Land Office					Annual Percent Change			
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00	1995-00
Population	51,302	58,877	51,400	50,817	47,995				
Per Capita Income (2000\$)	14,467	19,155	18,465	18,848	20,951	1.4	-1.3	-0.7	-1.1
Percent of MT	98.2	103.9	93.7	92.5	93.0	2.8	-0.4	1.3	2.1
Nonfarm Labor Income (Thous. of 2000\$)	423,264	787,202	568,752	600,116	613,974	6.4	-3.2	0.8	0.5
Basic Industry Labor Income									
Agriculture	142,576	46,893	56,115	33,150	36,235	-10.5	1.8	-4.3	1.8
Ag. Serv. And Forestry	5,996	4,022	6,938	7,445	7,725	-3.9	5.6	1.1	0.7
Mining	28,931	132,609	59,569	57,552	56,167	16.4	-7.7	-0.6	-0.5
Manufacturing	17,504	17,129	16,133	19,901	18,018	-0.2	-0.6	1.1	-2.0
Transportation	42,878	68,522	41,760	45,117	49,353	4.8	-4.8	1.7	1.8
Nonresident Travel	10,708	18,009	7,915	11,896	9,829	5.3	-7.9	2.2	-3.7
Federal Gov't	26,841	41,732	43,695	44,612	40,832	4.5	0.5	-0.7	-1.8

Sources: U.S.Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Table 3-3F
Selected Economic Indicators

	Montana					Annual Percent Change			
	1970	1980	1990	1995	2000	1970-80	1980-90	1990-00	1995-00
Population	697,172	788,752	800,204	876,553	903,157	1.2	0.1	1.2	0.6
Per Capita Income (2000\$)	14,737	18,433	19,716	20,386	22,518	2.3	0.7	1.3	2.0
Nonfarm Labor Income (thous. of 2000\$)	6,751,252	9,920,093	9,620,853	11,230,117	13,052,804	3.9	-0.3	3.1	3.1
Basic Industry Labor Income									
Agriculture	1,093,173	288,781	553,007	361,607	320,429	-12.5	6.7	-5.3	-2.4
Ag. Serv. And Forestry	44,622	46,381	90,078	92,500	133,659	0.4	6.9	4.0	7.6
Mining	259,463	508,123	317,262	320,906	297,229	7.0	-4.6	-0.7	-1.5
Manufacturing	731,346	918,617	737,066	739,745	816,142	2.3	-2.2	1.0	2.0
Transportation	373,362	523,357	375,790	383,544	414,440	3.4	-3.3	1.0	1.6
Nonresident Travel	167,699	302,822	236,341	334,539	365,700	6.1	-2.4	4.5	1.8
Federal Gov't	704,455	858,034	934,191	963,430	1,047,387	2.0	0.9	1.2	1.7

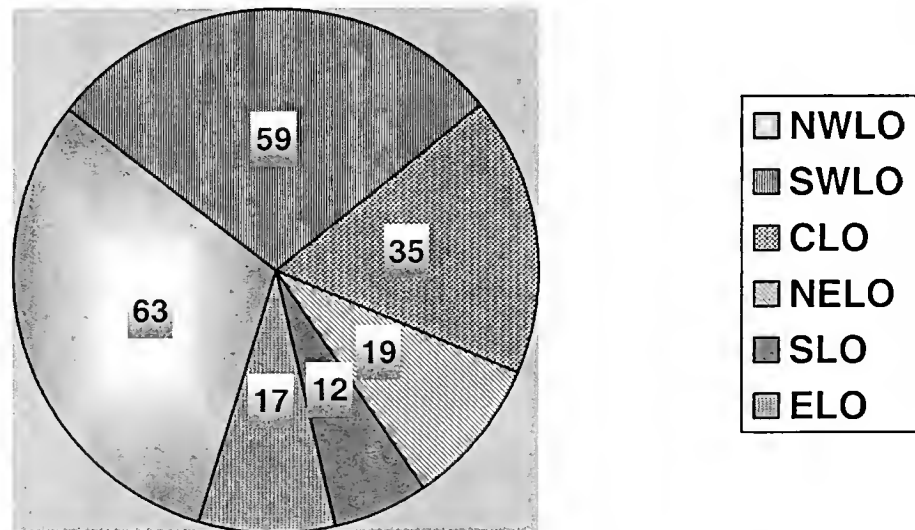
Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System. Institute for Tourism and Recreation Research, The University of Montana-Missoula.

3.2.1.2 Land Ownership

The state of Montana covers a total of 147,046 square miles or 94,109,440 acres. There are 145,552 square miles of land area and 1,490 square miles of water. In 2004, Montana's Trust Land total more than 5.2 million surface and 6.2 million mineral acres. The surface land holdings represent approximately 5.5% of the entire land area in Montana. The proportion of Trust Lands to other land ownership categories varies by land office region as previously described in Chapter 2, Table 2-1.

Federal lands make up a significant share of the total land area within each area land office. This is graphically presented in Figure 3-1.

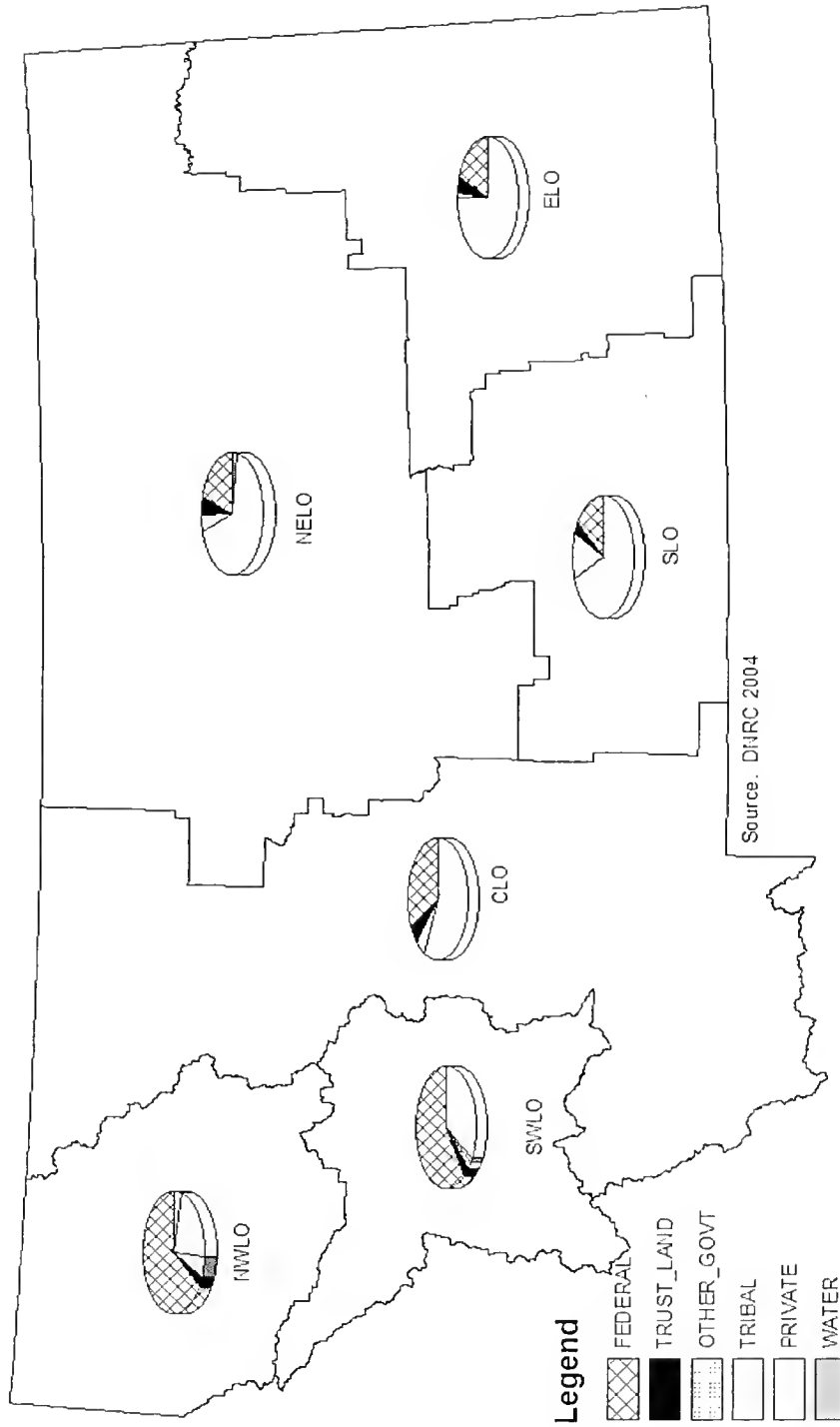
Chart 3-1. Percent of Federal Ownership Within Each Land Office



The general land ownership relationships by land office are also visually represented in Map Exhibit 3-2.

Map Exhibit 3-2. Land Ownership Relationships by Land Office

Land Ownership by Land Office



3.2.2 Trust Land Acreage

3.2.2.1 Trust Land Acreage by Land Grant

The DNRC administers approximately 5.16 million surface acres of Trust Land. The total acreage figure fluctuates through the years due to land sales and exchanges. Trust Lands are widely distributed across Montana. The dominant pattern is scattered sections, many of which are the original Sections 16 and 36 designated in Montana's Enabling Act. There are also significant blocks of contiguous ownership, including seven designated State Forests in the western third of the state.

In 1785, the Continental Congress, in the Northwestern Ordinance of May 20th, provided that section 16 of every township shall be set aside for the support the public schools. A subsequent provision set aside section 36. When Montana became a state in 1889, Section 10 of the Enabling Act provided that sections 16 and 36 be granted to the state for the support of the common schools. If any land in these sections were sold or otherwise disposed of prior to statehood, states were allowed to make "in lieu" selections. In Montana, desirable farmland was homesteaded, so in lieu selections were made in the mountains in the southwestern and marginal farming land in the north central and extreme southeast corner of the state. The final selection of "in lieu" lands was made in 1983. The scattered section pattern (16 and 36) remains predominant in the eastern half of the state in the Northeastern, Eastern and Southern Land Offices.

The original common school grant in Montana was for 5,188,000 acres, with an additional 668,720 acres granted for other endowed institutions. Today, revenue on 90 % of the more than 5.2 million surface and 6.2 million mineral acres of Trust Lands is dedicated to the common schools (K-12). The remaining 10% is directed to nine other beneficiaries. Acreages by beneficiary are presented in Table 3-4.

Table 3-4. Trust Land Acreage by Land Grant

Beneficiary	Surface Acres	Mineral Acres	Total Acres
Common Schools	4,633,474	5,601,046	10234520
University of Montana	18,556	33,754	52310
Montana State University – Morrill Grant	63,456	76,960	140416
Montana State University – Second Grant	31,424	47,077	78501
Montana Tech of the University of MT	59,440	86,267	145707
State Normal School	63,455	83,737	147192
School for the Deaf and Blind	36,461	41,171	77632
State Reform School	68,271	78,125	146396
Veterans Home	1,276	1,276	2552
Public Buildings	186,976	228,270	415246
Total Acreage	5162789	6277683	11440472

Source: 2003 DNRC Annual Report

3.2.2.2 Trust Land Acreage by Category

Trust Lands are divided into four surface classifications (77-1-401, MCA) including "forest", "other" (residential, commercial, industrial and conservation uses), "agriculture", and "grazing". Table 3-5 summarizes classified land acreages by land office.

Table 3-5. Trust Land Acreage by Land Office and Classification							
Classification	NWLO	SWLO	CLO	NELO	SLO	ELO	Total
Forest	296401	150094	31028	800	0	0	478323
Other	2159	750	15000	1547	2072	200	21728
Agriculture	822	1074	123098	364443	18669	59937	568043
Grazing	13876	79957	1075216	1632708	359460	901214	4062431
TOTALS	313258	231875	1244342	1999498	380201	961351	5130525

Source: DNRC 2004

Forest classified lands dominate in the western part of the state while agricultural and grazing lands dominate in the eastern half of the state.

3.2.2.3 Percentage of Trust Land Acreage in Real Estate Uses

The total relationship of Trust Land acreage leased for commercial, industrial, and residential uses to the greater regional acreages is summarized below in Table 3-6. In all locations, the percentage of Trust Lands leased to these types of developed uses is less than 1 % of the total trust acreage within each area office.

Table 3-6. Percentage of Trust Land Managed by the REMB			
Land Office Region	Developed Lease Acres On Trust Lands*	Percent of Total Trust Acreage	Percent of Total Land Acreage in Region
NWLO	1,815	0.58	0.02
SWLO	1,114	0.48	0.02
CLO	1,320	0.10	0.01
NELO	684	0.03	0.00
SLO	329	0.09	0.00
ELO	158	0.02	0.00
Total	5,420	0.10	0.01

3.2.2.4 Conservation Lands Located Within LO Regions

Within each DNRC land office area, there are land areas managed for conservation purposes by both public and private entities. Information regarding conservation managed by land office is presented in Table 3-7.

Table 3-7 Conservation Lands by Land Office (Acres)							
Natural Feature	NWLO	SWLO	CLO	NELO	SLO	ELO	Total
National Parks	619,590	1,594	520,384	235	29,284	0	1,171,086
USFWS	34,829	7,144	59,544	792,655	16,004	742	910,917
Wilderness Areas	1,242,868	628,236	1,187,946	0	402,901	0	3,461,951
FWP Ownership	16,302	104,154	130,225	18,801	8,013	15,273	292,768
FWP Easements	67,167	20,305	85,285	51,539	48	64,092	288,436
Private Conservation Ownership	1,436	12,615	23,765	32,391	0	10	70,217
Wild and Scenic Rivers	6,146	0	0	12,317	0	0	18,463
Total	1,988,338	774,047	2,007,148	907,939	456,250	80,117	6,213,839

Trust Land acreage has been measured with respect to how much Trust Land is currently adjacent to, within a half a mile of, or within a mile of the conservation lands shown above. This information is presented in Table 3-8.

Table 3-8. Relationship of Trust Lands to Existing Conservation Areas			
Land Office	Acres Adjacent	Acres Within 0.5 Miles	Acres Within 1 Mile
NWLO	22,233	38,502	50,867
SWLO	12,093	26,233	38,968
CLO	72,276	130,831	176,376
NELO	68,689	101,303	134,822
SLO	3,522	12,319	19,957
ELO	10,464	20,947	25,058

3.2.3 Trust Lands Administration

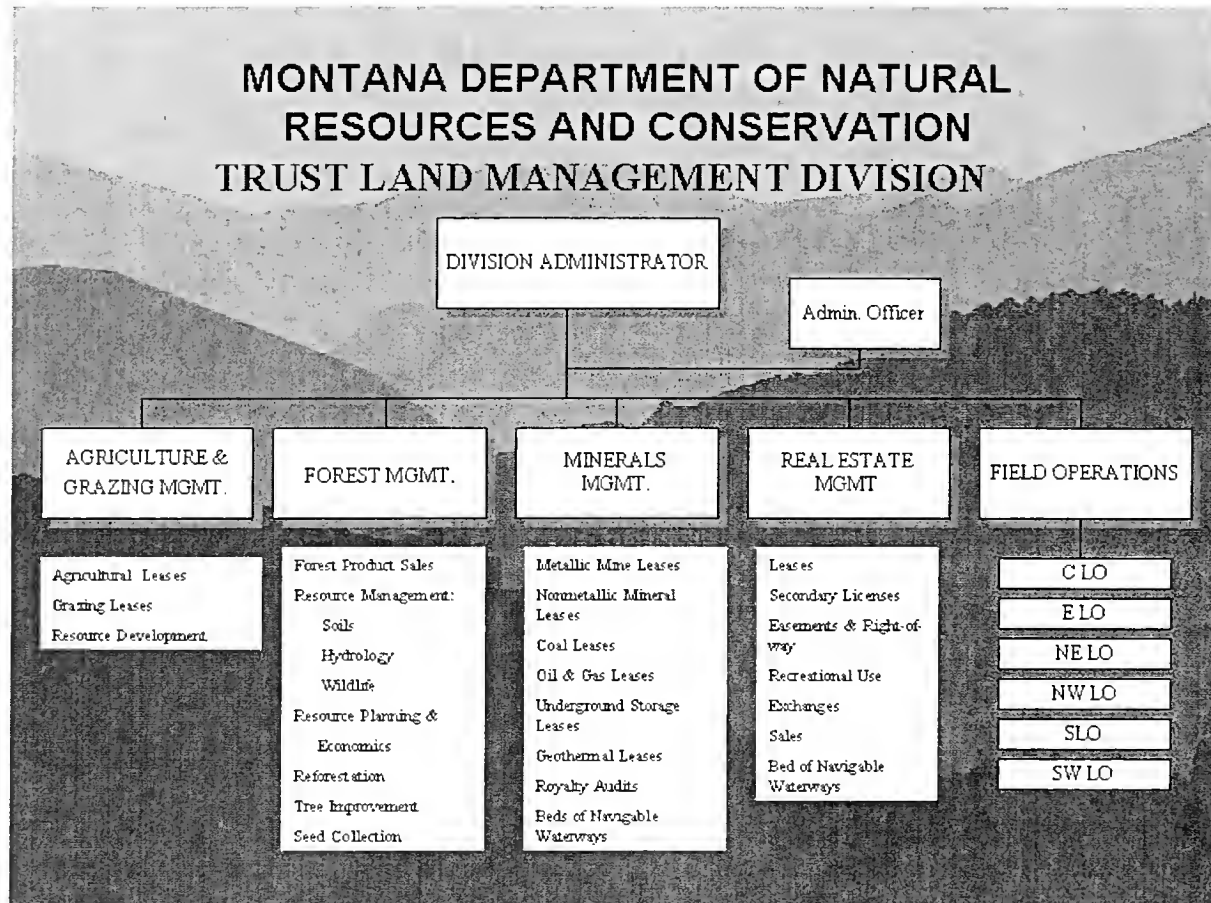
3.2.3.1 Trust Land Management Division

The TMLD is one of seven Divisions within the DNRC and is responsible for the management of state Trust Lands. As trust managers, the TLMD is first and foremost and asset management organization. The mission of the TLMD is to manage the State of Montana's Trust Land resources to produce revenues for the trust beneficiaries while considering environmental factors and protecting the future income-generating capacity of the land. The TMLD manages Trust Lands under four bureaus as follows:

- Forest Management – The Forest Management Bureau manages timber resources on Trust Lands to provide income to the various trusts. Income is derived from the sale of forest products. The six area land offices have primary responsibility for on-the-ground management activities. With assistance from the Forest Management Bureau, the land offices conduct environmental reviews of proposed management activities, prepare contracts for those activities, and complete the necessary field work.

- Agriculture and Grazing Management – The Agriculture and Grazing Management Bureau is responsible for leasing and managing approximately 10,000 agreements for crop and rangeland uses on Trust Lands throughout the state. These duties are accomplished by administrative staff and specialists located in the department's Helena office, and by staff located in field offices statewide.
- Minerals Management – The Minerals Management Bureau is responsible for leasing, permitting, and managing oil and gas, metalliferous and non-metalliferous, coal, and sand and gravel agreements on 6.2 million acres of Trust Lands and more than 100,000 acres of other state-owned land throughout Montana.
- Real Estate Management – The Real Estate Management Bureau (REMB) administers all activities on lands that do not have a primary surface use for Agricultural, Grazing, or Timber Management, including residential, commercial, industrial and/or conservation uses. REMB also manages all secondary activities on lands classified as grazing, agriculture, or timber. Secondary uses, for State purposes, are characterized as “licenses.” A license may be issued for temporary storage of gravel, construction materials, or equipment, for a group activity, for research, for outfitting and other forms of recreation, and for short-term agricultural uses such as grain bins, stockwater reservoirs, or pipelines. Fees for these uses are determined on a case-by-case basis or by using standard fees for more common licensed uses.

Figure 3-2. Trust Land Management Division -- Organization



3.2.4 Real Estate Management Bureau (REMB)

The REMB manages residential, commercial, industrial and conservation uses on Trust Lands and secondary uses on lands classified for timber, agriculture and grazing uses. Additionally, the REMB manages programs and processes for the issuance and acquisition of easements, the exchange of Trust Lands for private and federal lands, and the sales and purchases of Trust Lands to enable the management of state Trust Lands.

3.2.4.1 History of the Real Estate Management Bureau

The following is a brief chronology of events in the history of residential, commercial, industrial and conservation uses on Trust Land in Montana. Several non-resource based uses occurred early in this history and since 1984 the Land Board has become even more involved with these uses. Since the 1980s, the Bureau has also assumed a more active role in the development of non-resource based uses. Table 3-9 presents a summary history of the management of real estate activity on Trust Lands.

Table 3-9. History of Non-Resource Based Uses on Trust Lands – A Chronology

DATE	EVENT
1889	Montana statehood and the Enabling Act granted Sections 16 and 36 of every township for support and maintenance of the common schools, and specific acreage amounts for other grants (common schools, state normal school, school for the deaf and blind, state reform school, veterans home and public buildings). The selection of land for the other grants was usually done by blocking sections of land.
1890	State Board of Land Commissioners (Land Board) began meeting.
1890s	Land Board authorized first platting of town sites and school sites. Over the next few decades, such plats were filed for Augusta, Aldridge, Columbus, Cut Bank, Bozeman, Geraldine, Glendive, Great Falls, Havre, Helena, Kalispell, Lewistown, Nashua, Missoula, Perma, Shelby, Sheridan, Terry, Malta, Billings. Some land was sold, some was leased.
1890s – 1950s	The process of selecting lands for the common schools (in-lieu selections) began. In-lieu selections were used where there was an existing claim on the land, such as Indian reservation, homestead or mineral claim or patent, railroad grant, forest reserve, fractional township (that is, less than 640 acres), or reclamation withdrawal. This process continued for several decades as national forests were established and in-lieu selections were used to create the state forests in the 1920s and other blocks of land.
1890s – early 1900s	Other blocks of Trust Land were created when the state selected land for the other grants provided for in the enabling act.
1900	Land sales occurred in response to requests from railroads and private individuals.
1910	Farm Loan Program begins. The State Board of Land Commissioners loaned Trust Land funds to private parties for purchase of private land. The state began adding to the land base because many persons defaulted on these loans during the 1930s due to drought, weather and unfavorable economic conditions. Approximately 500,000 acres were acquired through such foreclosures. Several home sites were created in eastern Montana during this time.
1910	Large blocks of Trust Land were created in western Daniels and central Valley Counties in exchange for land in Glacier National Park.

Table 3-9. History of Non-Resource Based Uses on Trust Lands – A Chronology

DATE	EVENT
1923	The Stillwater State Forest was created through in-lieu selections for land in national forest.
1924	Early cabin sites were leased on Flathead lake.
1926	Land Board began process of in-lieu selections for Trust Land located on Fort Belknap Reservation and continued in-lieu selections for Trust Land now located in national forest.
1927	The Swan River State Forest was created through in-lieu selections for land in national forest.
1930s	Applications for a variety of new uses for Trust Land were received, including airfields, dude ranches, fur animal farms, automobile service stations, fish hatcheries, Christmas tree farms and cabin and home sites. Prior to this time, there were very few cabin and home site leases.
1940s	Cabin sites were created on western Montana lakes. Cabin site leases more than double in western Montana during the past five years and total 238.
1954	Substantial increase in applications for home and cabin sites in western Montana occurred. The Land Board approved the first rules and regulations specifically for cabin and home site leases.
1954	The Montana Department of Fish and Game leases Trust Land for winter range.
1984	The Land Board initiated changes to state law in response to increasing requests for commercial leases for Trust Land, that is, to clearly allow leasing for commercial development, to allow commercial leases of up to 40 years, and to allow renewal of commercial leases. The Land Board, in response to demand from growing cities and towns, considered the need to manage Trust Land in urban areas for other than traditional resource based uses.
1987	The Land Board notes that the state is still owed about 1,000 acres from in-lieu selections.
1996	Establishment of the Special Uses Management Bureau
2000	Special Uses Management Bureau staff proposed a Programmatic Environmental Impact Statement (PEIS) for special uses on Trust Land.

Table 3-9. History of Non-Resource Based Uses on Trust Lands – A Chronology

DATE	EVENT
2001	Crow Tribe Exchange completed. Trust Land inside the boundaries of the Crow Tribe Reservation is exchanged for land outside the reservation.
2004	The Special Uses Management Bureau becomes the Real Estate Management Bureau

Until 1996, the residential, commercial and industrial programs of the TMLD were managed under the Agriculture and Grazing and Forest Bureaus. Program activities were limited to property management and maintenance. The first recreational residential leases were issued in western Montana in the 1940s and 50s. Commercial and industrial leases were issued primarily in rural areas to support timber management. Overall, given limited staff resources, residential, commercial, and industrial uses were typically developed in response to project proponents.

However, as demand increased for residential, commercial and industrial lands in and around the state's urban areas, the TMLD experienced increased demand for non-extractive related uses on adjacent Trust Lands. In response to this increased demand and the potential to derive greater revenue from these "transitional" lands, the Department created the Special Uses Bureau (the present Real Estate Management Bureau) in 1996. Initially, staff efforts were directed to maintaining the existing program, primarily reacting to proposals initiated outside the Department. Since 1996, the Bureau has added one full time equivalent (FTE) employee at the Bureau Level and reorganized the field staff at its Northwestern, Southwestern and Central Land Offices to support both internal and external project initiation.

Whereas the Division has historically managed for natural resource extraction, the data supports broadening those land-use activities to include uses that generate greater revenue per acre. Invariably, that means rearranging the asset portfolio from one that is overly reliant on grazing and acquiring or developing lands that have the potential for commercial, industrial, residential, and conservation leasing opportunities. This shift has already begun, albeit on a small scale. The Department has begun increasing its commercial activity and continues to commit additional staff to the REMB.

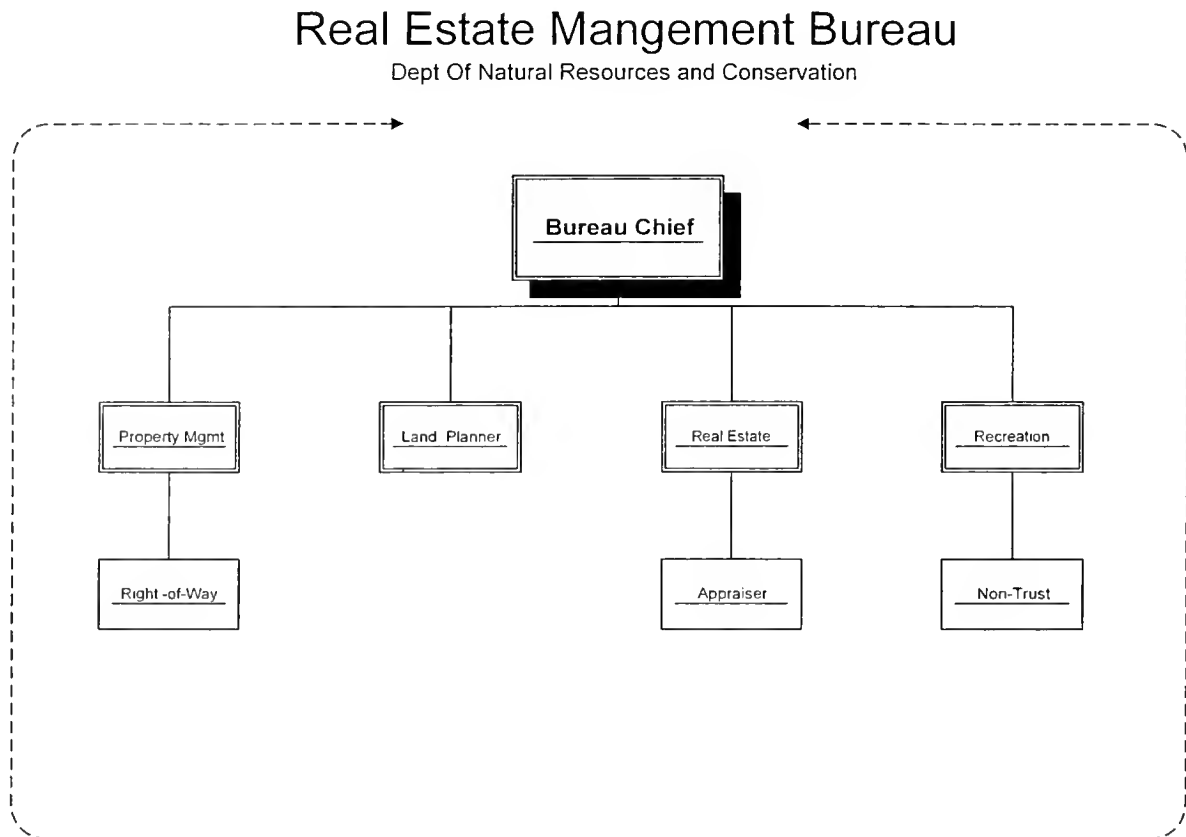
3.2.4.2 Administrative Structure

State Trust Lands are managed and administered under the direction, goals, and objectives of the Land and Unit offices through policy and procedures developed by the Bureau.

- Staffing – The Bureau Chief oversees the REMB and is responsible for four primary functions: Real Estate Services, Property Management, Rights-of-Ways, and Recreational Use. The Bureau staff includes the equivalent of 3.55 FTE's (Full Time Equivalents). The Property Manager, Appraiser, Real Estate Services Supervisor, and State-Wide Planner are Bureau personnel responsible for the management and administration of

the programs under the REMB. The Bureau organizational structure is shown in Figure 3-3.

Figure 3-3. Organizational Chart for the Real Estate Management Bureau



The Bureau Staff is supported by an additional 9.55 FTE's, representing an aggregate of 28 full time employees across six land offices. Land Use Planners are being staffed in the Southern, Central, Southwestern, and Northwestern Land Offices. Land office staffing allocations are presented in Table 3-10.

Table 3-10. L.O. Staffing	
Land Office	Number of Full Time Equivalents
NWLO	2.8
SWLO	1.65
CLO	0.75
NELO	0.35

Table 3-10. L.O. Staffing	
Land Office	Number of Full Time Equivalents
SLO	0.3
ELO	0.2
Total	9.55

- Operations – Currently, real estate project development opportunities are identified by a Commercial Development Working Group with input from unit and area offices of the DNRC. The REMB and associated field staff personal services budget is \$565,044 plus \$221,337 that supports the operations of the programs including implementation of the project list.

3.2.4.2 Real Estate Activities

The REMB can employ a number of private and public sector real estate strategies to achieve desired outcomes for projects related to residential, commercial, industrial uses. For example, real estate projects may require the formation of a joint venture between the Department and private interests in order to finance needed infrastructure. The Department could use innovative real estate planning tools such as transfers of development rights to help target development in areas that are in close proximity to existing infrastructure or in areas of high growth. Density bonuses could be sought from local planning authorities to help promote affordable housing. State law provides for specific land use authorizations and transactions associated with the management of Trust Lands as outlined below.

- Land Use Authorizations
 - Leases – Under 77-1-204, MCA, the state is authorized to lease Trust Lands for uses other than agriculture, grazing, timber harvest, or mineral production. Leases are generally issued for a term not to exceed 99 years. 77-1-904, MCA specifically allows for leasing of Trust Lands for commercial purposes. Leases may also be used for recreational, residential and industrial purposes. Lease rates are based on a percentage of land value. Generalized annual lease rates at the current time for various categories of use are as follows:
 - Commercial: 5%-10%
 - Conservation: 5%
 - Industrial: 5%-10%
 - Residential: 5%

The above percentages are calculated against the full market value of the property.

- Licenses – The Department issues licenses for a variety of purposes on all classes of state lands under a multiple use management concept (77-1-203, MCA). Typically licenses are issued for a shorter period than leases, 10 years or less.

- Easements – Easements may be granted on state lands under 77-2-101, MCA for schools and other community buildings, parks, cemeteries, right of ways for various purposes and private encroachments. They may be granted for conservation purposes to the Department of Fish Wildlife and parks or to a nonprofit corporation that owns adjacent parcels that are surrounded by or adjacent to land owned by that same nonprofit. From the perspective of a conservation easement, the “cost” of an easement is based upon the full market value of the purchased “rights” associated with the property. In most situations, the “cost” of conservation easements would be approximately 50% of the appraised value of the property. The “cost” of permanent easements for schools, roads, and other such facilities would be the full market value of the property.
- Land Transactions – As provide by the Montana State Constitution (Article X, Section 11, (1) & (2)) and by 77-1-204, MCA the state can sell, purchase, lease or exchange Trust Lands when, in the State Board of Land Commissioner’s judgment, it is advantageous to do so. These activities are further subject to the following provisions:
 - Land Banking – The purpose of Land Banking as provided for under 77-2-361 and 77-2-362, MCA is to sell various parcels of state lands and use the proceeds from the sales to purchase other land, easements, or improvements for the benefit of the beneficiaries of the respective trusts and improved public access. The department may hold proceeds from the sale of state land in the state land bank fund for a period not to exceed 10 years after the effective date of each sale. If, by the end of the 10th year, the proceeds from the subject land sale have not been encumbered to purchase other lands, easements, or improvements within the state, the proceeds from that sale must be deposited in the public school fund or in the permanent fund of the respective trust as required by law, along with any earnings on the proceeds from the land sale, unless the time period is extended by the legislature.
 - Land Exchanges – State Trust Lands may be exchanged with lands owned by other public or private entities. Land exchanges are provided for in the State Constitution (Article X, Sec 11(4) and statute (77-2-203, MCA) and are evaluated with respect to the following seven base criteria. Lands may be exchanged for other properties that offer:
 - Equal or greater land value
 - Similar navigable lake or stream values
 - Equal or greater income to the trust
 - Equal or greater acreage
 - Opportunities for consolidation of state Trust Lands

- Potential for long-term appreciation
- Improved or equal access to state or public lands

Land exchanges are typically a multi-year process and have not been a priority land use tool in recent years. However, land exchanges can be useful to diversify Trust Land ownership. Land exchanges with the Montana Department of Transportation have resulted in new trust ownerships in the commercial areas of Missoula and Belgrade. Land exchanges can be useful for accomplishing these types of objectives, where low revenue generating properties can be exchanged to acquire properties in growth areas. The Board of Land Commissioners has approved six land exchanges in the last six years.

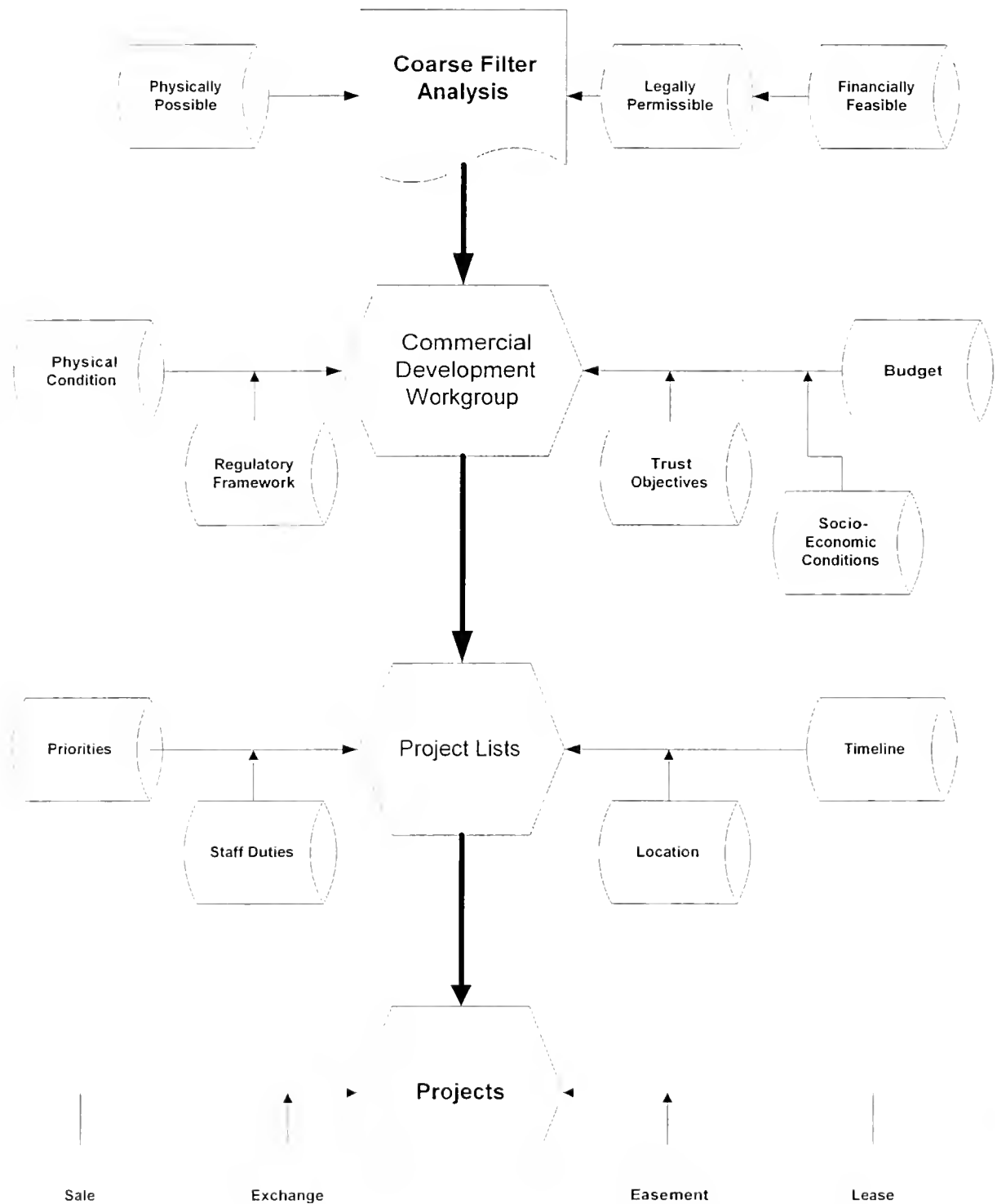
- Land Sales – Under the provisions of the Montana State Constitution (Article X, Section 11 (1&)) and state statute (77-2-323, MCA), state lands may be sold to the highest qualified bidder, but not for less than its appraised value. While land banking enables the Department to sell lands and reinvest the proceeds in other lands, the proceeds from traditional land sales must be placed in the permanent trust.

Over the past 12 years, the Board of Land Commissioners has discouraged the sale of Trust Lands. At the request of the Board, the DNRC initiated legislation that provided for banking of funds from sales for the acquisition of replacement Trust Lands that would have greater revenue potential. Land sales over the past 6 years have been primarily limited to 28 single family lots located in Billings. 77-2-318, MCA, guides the sale of leased cabin or home sites.

3.2.4.3 Coarse Filter Process

The Department created a coarse filter process to evaluate and identify trust lands suitable for project development. The coarse filter analysis rates land in relation to the (1) legally permissible, (2) physically possible, and (3) financially feasible. The analysis places property in one of three Tiers. Tier I would suggest that the property has the amenities and capabilities for development. Tier I would be analogous to the properties identified as “High” in Table 2-6. Tier II indicates that the property may need some infrastructure, access, or is of a distance from an urban area that would not lend itself to development in the near future. Tier II would be analogous to the properties identified under Table 2-6 as “Medium”. Tier III indicates that the property would not be suitable for development or has several limiting factors to overcome before project consideration. Tier III would be analogous to the properties identified in Table 2-6 as “Low”. The Land and Unit Offices utilize this analysis to evaluate land for consideration by the Commercial Development Working Group. The Working Group consists of Area planners, Land Use Specialist, Bureau Chief, Property Manager, and State Wide Planner. The working group considers and evaluates projects, timing, and budgets necessary to proceed with project under a 1-3-5 year plan. A diagram of the existing project identification is shown in Figure 3-4.

Figure 3-4
Existing Project Identification Process



The coarse filter process is also used for the evaluation of land exchanges and the issuance of easements. The analysis is only applied on a project basis. An inventory using the coarse filter approach is not conducted on a landscape basis. The coarse filter process is modified under Alternatives B, B-1, C and C-1 to create the Funnel Filter Process (Figure 2-4).

The Commercial Working Group is analogous to the ID Team of the Project Selection Process (Figure 2-5) associated with Alternatives B, B-1, C, and C-1. The 1-3-5 year Project List created by the Commercial Development Workgroup is also analogous to the Real Estate Management project list of that process.

3.2.4.4 Current Trends in Development

The REMB is currently involved with a number of commercial, residential, Industrial and conservation land use projects. Overall, the Department is responding to market demands in high growth areas of the state. The following sampling of projects from around the state provides an overview of the REMB's current activities.

- Northwestern Land Office
 - Spring Prairie – In Kalispell, a neighborhood plan and zoning was prepared for Section 36, also known as Spring Prairie. The plan identifies land use opportunities for retail commercial, professional offices, and residential, among others. A 60-acre lease has been authorized for a commercial center, with Lowes Home Improvement Center as the anchor tenant. The sale of an easement is pending to allow future construction of a high school. An easement purchase of land to accommodate the Highway 93 By-Pass through Section 36 is also pending. Up to 160 acres of residential property within the section may be offered for sale in 2005.
 - Whitefish Neighborhood Plan – In the vicinity of Whitefish, a neighborhood plan is underway for 13,000 acres of Trust Lands within the Whitefish and Flathead County planning jurisdictions. The plan would identify land use objectives for commercial, conservation, industrial, and residential uses on lands currently classified as “forest”.
- Southwestern Land Office
 - Seeley Lake – Approximately 18 acres of frontage on Seeley Lake have residential potential. An unrecorded plat identifies 12 lots. Local review and approval of lots at this location is desirable.
 - Seeley Lake Airport – Section 36 near the Seeley Lake Airport would be suitable for a variety of uses. The property is bounded on 3 sides by existing development and inquiries have been made for residential uses, sewer system, and developed recreation facilities.

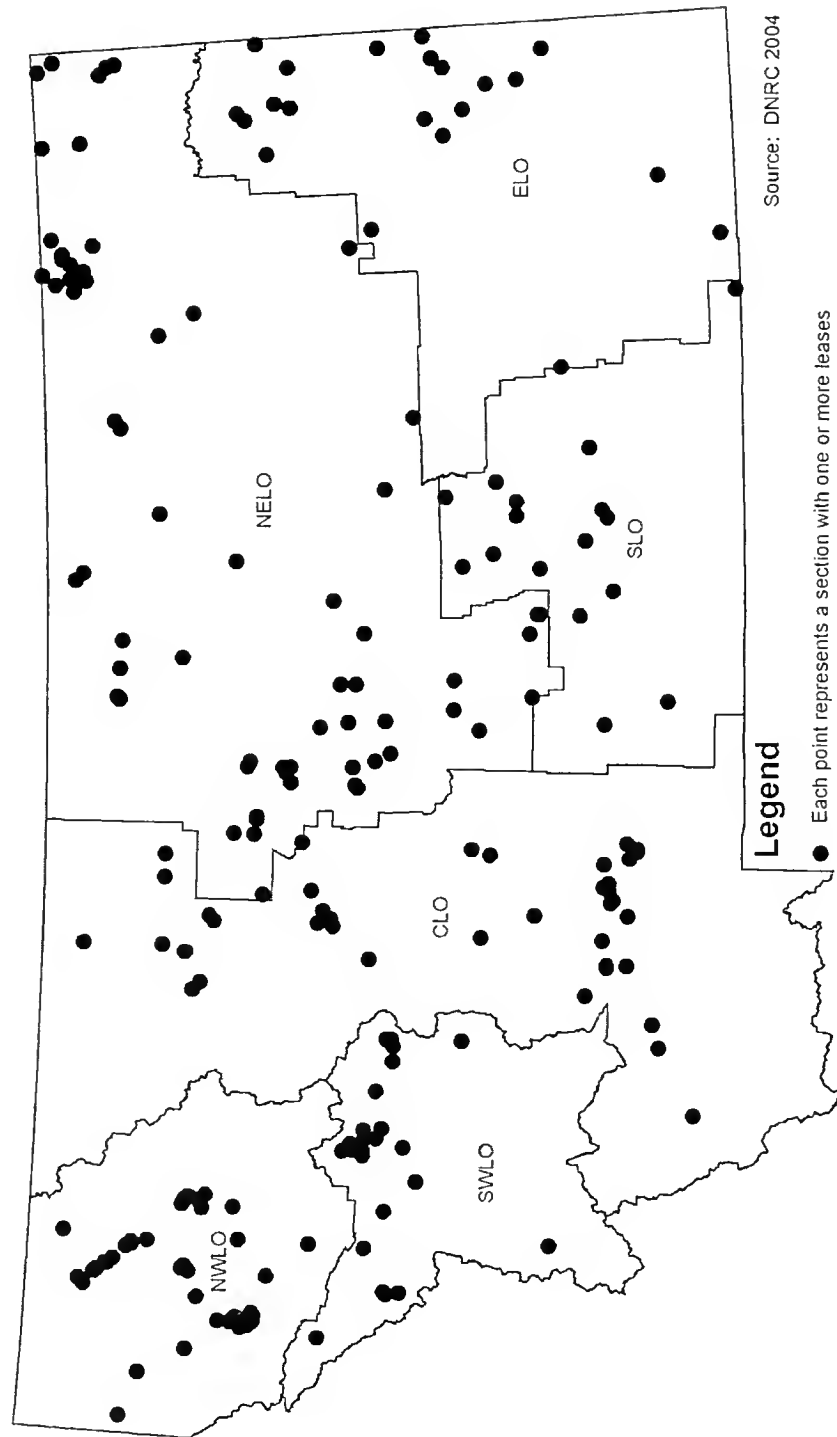
- Reserve Street – The REMB received 2 commercial lots on Reserve Street in Missoula from a land exchange with MDT. The property is being marketed for commercial leasing.
- Central Land Office
 - Lewis and Clark Commerce Center – SW ¼ Section 36, T1S, R5E (approximately 33 acres): The final Plat is recorded and Lot 1, Block 1 lease is completed and a office building has been constructed and other lease proposals are being considered. Marketing of available lease lots to prospective tenants continues.
 - Mandeville Property – Section 36, T1S, R5E (216.73 acres): REMB submitted a preliminary development plan of the property to the city in 1998. The City of Bozeman is currently applying for an easement for a new transfer station and city shops. The REMB and the city will make a joint annexation proposal. The area will be zoned M-1 in accordance with Bozeman's 20/20 plan.
 - Alaska Road Commercial Site – NW ¼ Sec. 12, T1S, R4E (3 acres): Located adjacent to Belgrade interchange (SE corner), this is a parcel recently acquired in an exchange with MDT. Currently the Bureau is waiting for the City of Belgrade to complete their extension of public services and annexation plan. Project will require annexation into City of Belgrade and participation in an SID for the extension of services in the area.
 - Amsterdam Road – Section 11, T1S, R4E (436 acres): This property is located immediately southwestern of Belgrade I-90 interchange. Currently under agricultural use, this parcel is targeted in the Belgrade area master plan for commercial/business/residential use. Annexation, rezoning, and development of a neighborhood plan is pending.
 - Fox Farm Residential – SW ¼ Sec. 23, T20N, R3E (90 acres): This property is located immediately adjacent to south boundary of Great Falls City Limits. Existing housing development lies along the north boundary of property. River frontage and level topography give this site high potential for development. Potential uses are: open space/recreation fields, condominiums, residential housing, and a retirement complex.
 - I-15 10th Ave S Commercial Subdivision – NW ¼ SE ¼ Sec.15, T20N, R3E (4 acres): Currently Hampton Inn leases the entire parcel. Inquiries are being explored for sub-lease possibilities.

- Southern Land Office
 - Continental Divide/Skyview Ridge – N ½ Section 20, T1N, R26E (approximately 238 acres undeveloped): This property is located immediately adjacent to the Billings Heights. All but three lots have been sold from the first subdivision; remainder of property is grazing land and is targeted for conversion to commercial/business/residential use. A contract is in place for a Master Plan amendment and a second contract is for a Minor Subdivision. A proposed Aquatics Center on the Trust Land is dependent on passage of June bond.
 - North Billings Properties – T1N, R25E (9 sections -approximately 4610 acres): This property is located north of the city of Billings adjacent to a residential subdivision with a proposed equestrian center and golf course. A proposal by Montana Department of Transportation will look at an inner belt loop road that would provide increased access for development of these properties for residential and business development. There is also a strong interest for recreational use and open space.

These projects indicate that the Bureau is currently moving towards a development program, generally defined under Alternative A in Chapter 2 of this EIS. REMB staffs are responding to new opportunities in growing market areas. Map Exhibits 3-3 to 3-6 display the general location of leases associated with residential, commercial, industrial and conservation land uses on trust lands.

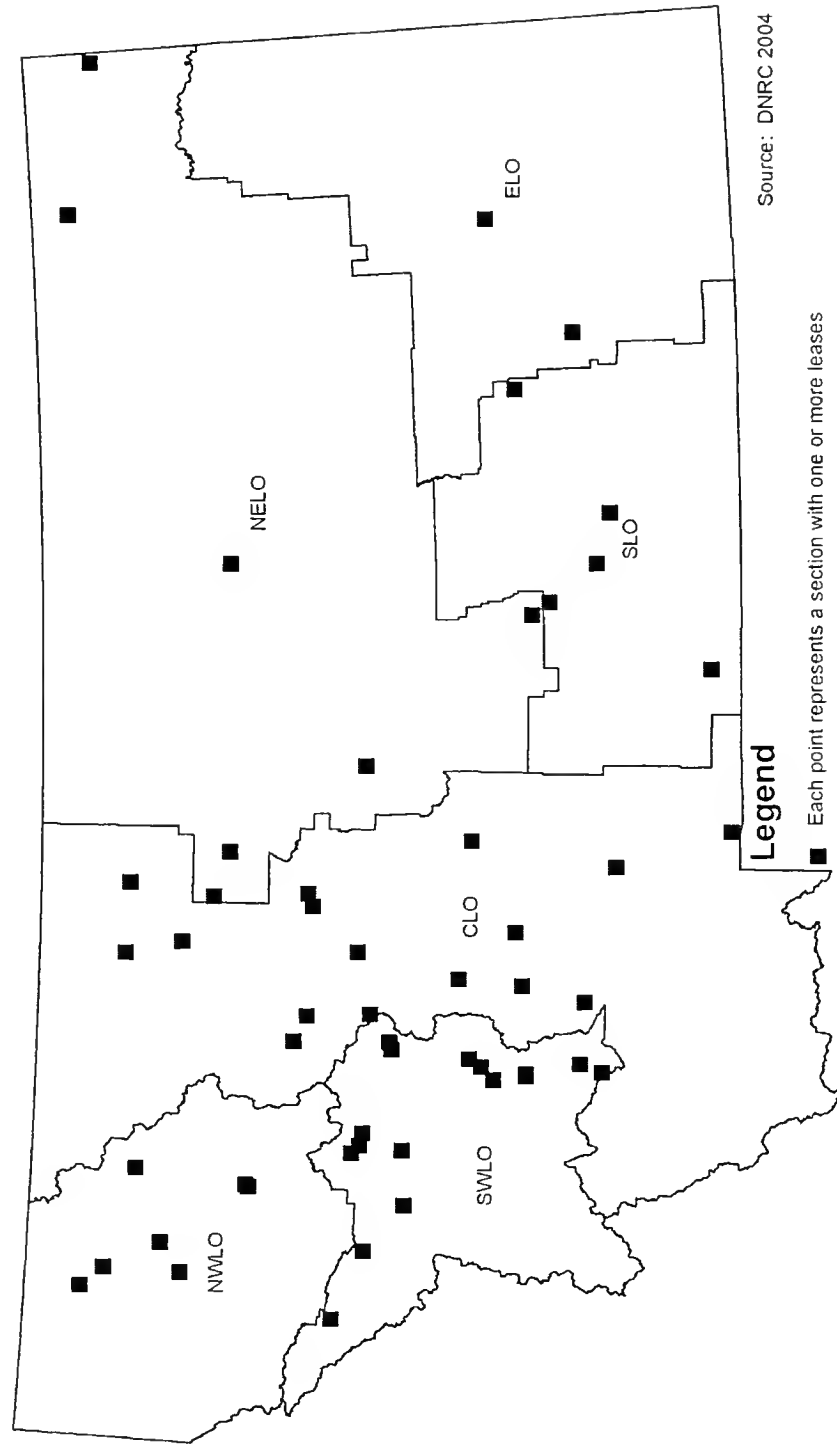
Map Exhibit 3-3.

General Locations of Existing Real Estate Leases on Trust Lands - Residential



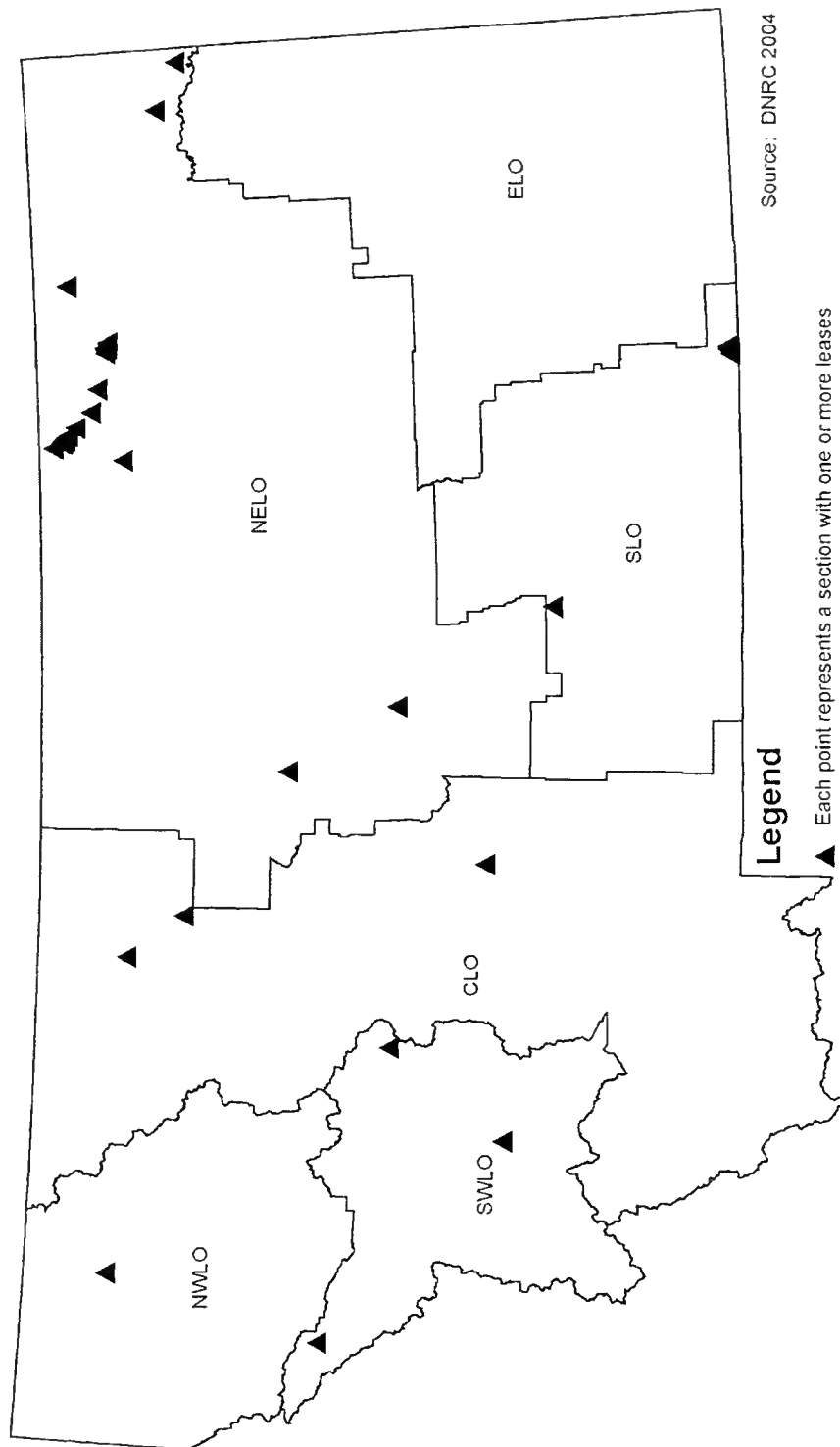
Map Exhibit 3-4.

General Locations of Existing Real Estate Leases on Trust Lands - Commercial



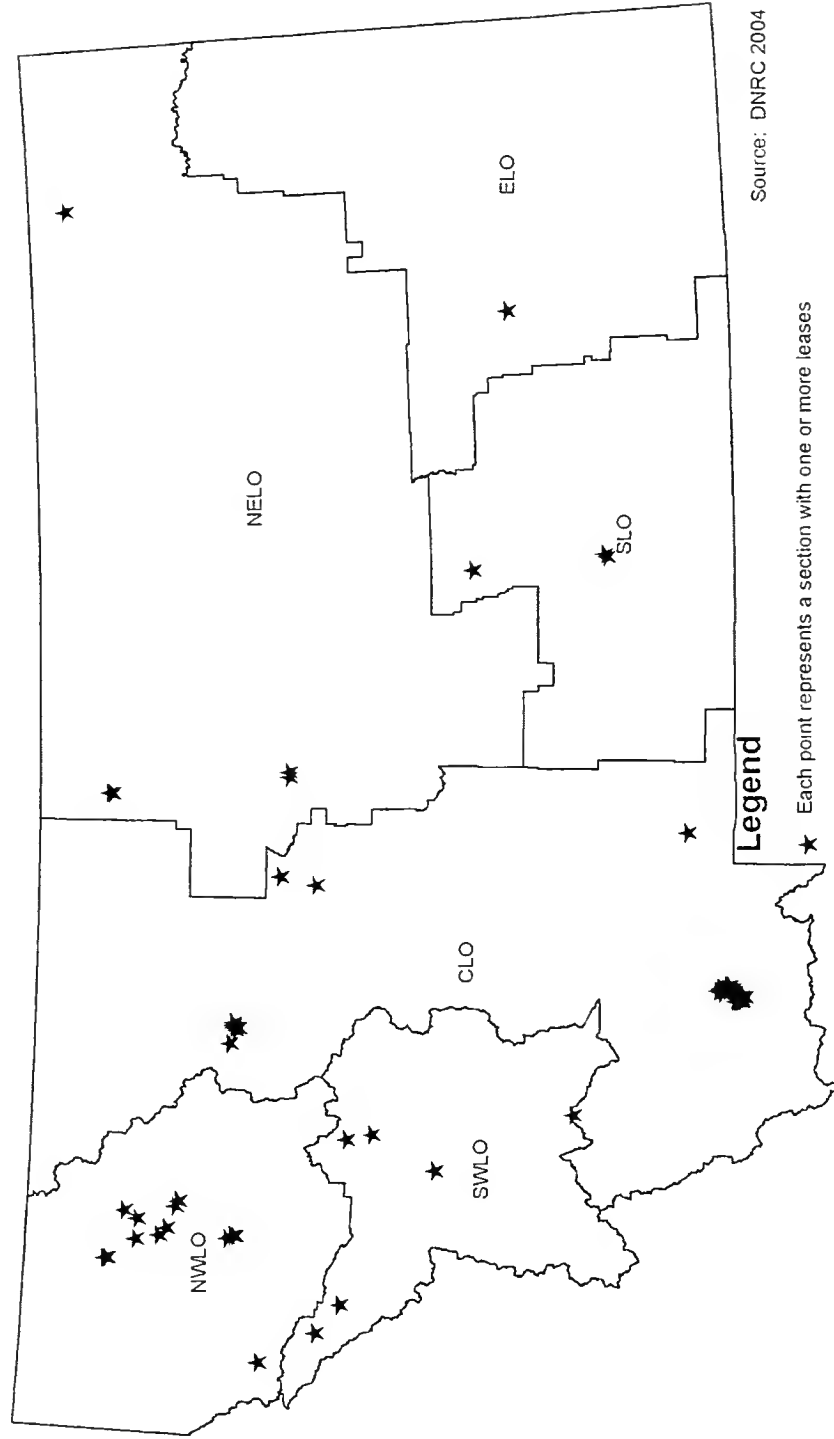
Map Exhibit 3-5.

General Locations of Existing Real Estate Leases on Trust Lands - Industrial



Map Exhibit 3-6.

General Locations of Existing Real Estate Leases on Trust Lands - Conservation



3.2.5 Trust Land Economics

DNRC releases an annual report that provides an accurate description of bureau activities and revenue. In addition, an annual report is issued on the Return on the Asset Value by Trust and Land Office for State Trust Lands. Both of these annual reports are posted on the DNRC web site and are available in hard copy upon request. The reader is encouraged to examine these reports for more detailed information on Trust Land economics.

Trust Lands are affected by local growth indices (population and economics) and the proposed alternatives presented in Chapter 2 suggest that Trust Lands will share in the expected growth of communities. Information on population and economic growth trends in Montana are presented in Section 3.2.1 of this Chapter and in Appendix B.

The following two tables provide summary information on Trust revenue. The first table (Table 3-11) presents a summary of annual net revenue generated by each Bureau of the TLMD. The second table (Table 3-12) is a summary of lease revenue generated by activities managed by the REMB. Not included is revenue from licenses or land sales.

Table 3-11. Trust Net Revenue by Source

Source	FY 1999	FY2000	FY2001	FY 2002	FY2003
Ag and Grazing	\$12,567,944	\$12,972,307	\$13,127,720	\$12,097,023	\$13,072,974
Forest Mgmt.	\$2,894,527	\$7,486,558	\$3,531,233	\$4,996,012	\$3,138,699
Minerals Mgmt	\$6,340,023	\$10,899,180	\$20,147,435	\$8,745,150	\$11,310,736
Real Estate	\$798,840	\$1,157,842	\$982,423	\$1,097,211	\$1,206,388
Total	\$22,601,334	\$32,515,887	\$37,788,811	\$26,935,396	\$28,728,797

Source: Montana DNRC

Table 3-12. Real Estate Management Bureau – Current (2003) Annual Lease Income

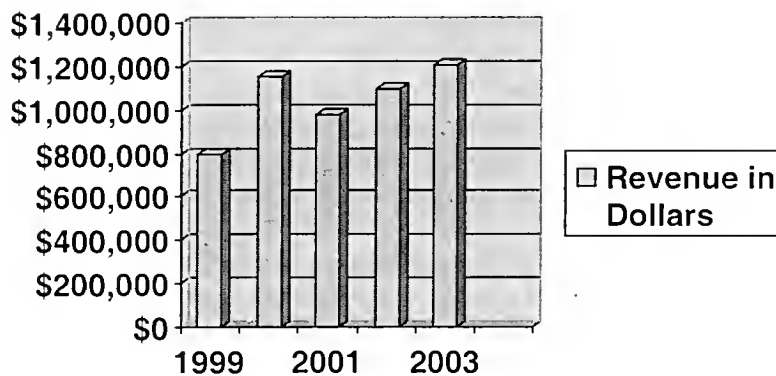
Land Office	Res. Acres	Res. Revenue	Com. Acres	Com. Revenue	Industrial Acres	Industrial Revenue	Cons. Acres	Cons. Revenue
NWLO	824	\$391,985	859	\$123,963	132	\$16,400	0	0
SWLO	826	\$421,070	208	\$43,050	80	\$16,686	0	0
CLO	298	\$34,830	365	\$52,169	657	\$3,110	13,714	\$82,757

Table 3-12. Real Estate Management Bureau – Current (2003) Annual Lease Income

Land Office	Res. Acres	Res. Revenue	Com. Acres	Com. Revenue	Industrial Acres	Industrial Revenue	Cons. Acres	Cons. Revenue
NELO	574	\$18,978	107	\$6,364	3	\$1,154	760	\$2,392
SLO	100	\$8,900	227	\$17,105	2	\$1,056	160	\$720
ELO	148	\$5,687	10	\$1,560	0	0	0	0
TOTAL	2,770	\$881,449	1,775	\$244,210	874	\$38,405	14,634	\$85,869

While the current program continues to be largely reactive rather than proactive regarding market conditions, revenue to the Department from associated commercial, industrial and residential uses continues to grow. Figure 3-5 shows REMB Bureau revenue for the past five years.

Figure 3-5. REMB Revenue -- 1999-2003



Source – Managing Montana's Trust Lands, Montana Business Quarterly, Winter, 2003, DNRC Return on Asset Report

3.2.6 Existing Planning and Regulatory Programs Within, Which the REMB Operates

3.2.6.1 Local Land Use Regulations

At the local level, land development is subject to three primary types of land use policy and/or regulation. These include subdivision regulations, zoning ordinances and growth

policies. Montana statute sets forth the items that must be addressed under each, although local jurisdictions may incorporate additional elements. Refer to Chapter 5 for details on these regulatory processes and relationship to MEPA analyses. Currently, the REMB follows land use regulatory processes that are required in the development of residential, commercial, and industrial uses at the local level.

3.2.6.2 Habitat Conservation Plan (HCP)

The Trust Lands Division of DNRC is currently preparing a voluntary Habitat Conservation Plan for forest-management activities on State Trust Lands. The HCP will address those lands that provide habitat for species currently listed or those that could be listed under the Endangered Species Act (ESA). The HCP offsets harm caused by lawful activities, such as forest management practices, by promoting conservation measures to minimize or mitigate impacts to threatened and endangered species. The HCP is part of the application for obtaining an "Incidental Take Permit" from the United States Fish and Wildlife Service (USFWS). An Incidental Take Permit authorizes the holder to "take" listed species, including the disturbance of habitat (as defined by the ESA), provided that that species' existence is not 'jeopardized' and the disturbance is within limits defined in the permit. The DNRC HCP would cover approximately 700,000-forested acres of concentrated and scattered Trust Lands across the State of Montana. The HCP may also include approximately 300,000 acres of non-forested parcels that are used to access forested lands. The initial proposed duration period for the Incidental Take Permit and the associated HCP is 50 years, with the opportunity for the State to remove itself from the agreement at any point during the development or implementation of the HCP.

- HCP Relationship to Transitional Lands – The Programmatic EIS describes a systematic approach to the identification and selection of real estate opportunities on Trust Lands. The approach offers a filtration methodology for identifying lands that may ultimately be suitable for residential, conservation, commercial, and/or industrial purposes. These potentially suitable lands would be sorted into three levels:
 - Level 1 – Acres already developed
 - Level 2 – Acres planned for development in the next 10 years.
 - Level 3 – Acres identified as having a low, medium, or high probability for development based on distance to the nearest residence.

The acres in Level 3 would not include the same acres that are included in Levels 1 and 2. Level 1 (already developed) and Level 2 (planned for development) lands that are forested acres and their related access roads are not anticipated to be included in the HCP. However, forested lands that are identified as Level 3 (high probability for development) are anticipated to be included in the HCP. Although development predictions would also identify low- and medium-probability acres, the HCP would only reflect the number of acres indicated as having a high probability for development.

- Land Transaction Proportionality Rules – It is anticipated that the HCP would establish Land Transaction Proportionality Rules that govern the totality of forested land dispositions under the HCP. These rules would be designed to ensure that a balance is maintained between property transactions that improve conservation certainty and those that reduce conservation certainty. Dispositions are assigned a *proportionality factor* based on relative conservation certainty under changing ownership. If the land transactions stay within the designated range of permitted proportionality, no Incidental Take Permit (ITP) amendment is required for land dispositions. That is, land dispositions meeting the Proportionality Rules requirements may occur without prior approval by USFWS and would not require an ITP amendment. These provisions create direct incentives for the REMB to increase the amount of forested land placed into a status of high conservation value - that is, Bureau is given incentives to dispose of land to buyers that will ensure that the conservation benefits offered by the HCP persist in the future.

Land transactions would be accounted for by assigning a number to the transaction that is equal to the proportionality factor times the acres involved in the transaction. Prior to accounting for any land transactions, the balance, or “score,” would be 0 and transactions would add to or subtract from the balance as determined by the assigned proportionality factor. The HCP would be considered to be functioning as expected if the score is maintained within a range limit of plus or minus zero.

The anticipated range limit is a number equal to 10 percent of the HCP-area acres as of the issuance date for the ITP. This number may change during negotiations with USFWS.

A balance sheet would probably begin at a date set in the HCP. Each 5 years during the term of the HCP, DNRC would likely report the proportionality calculations and balance sheet to USFWS. If the balance drops below the range limit at a 5-year reporting point, the REMB would probably conduct land use actions or transactions that would restore the balance within the range limit within the following 5-year period. A conservation surplus will be recognized if the balance exceeds the range limit on the positive side.

If the proportionality balance remains below the range limit at the end of the HCP term, restrictions would likely be applied to sufficient acreage within the HCP area to counterbalance the net deficiency in the proportionality balance to restore the balance within the range limit. Table 3-13 illustrates a hypothetical balance sheet.

Table 3-13. Hypothetical Balance Sheet – Proportionality	
Proportionality Factor	Land Disposition Type
1.0	Dispositions to a Federal agency
0.5	Conservation dispositions and sale of development rights
0.0	“Conservation Neutral” dispositions

Table 3-13. Hypothetical Balance Sheet – Proportionality				
Proportionality Factor	Land Disposition Type			
-1.0	Unrestricted dispositions			
0.0	Acquisitions: “Conservation Neutral”			
0.5	Acquisitions that bring new lands under HCP provisions			
	Land exchanges; proportionality factor is calculated based on net conservation effect			
Example Transaction	Type and Proportionality Factor	Acres	Proportionality Contribution	Balance
Starting point date				0
Conservation easement established next to a private development that includes the sale of development rights	0.5	4500	2250	2250
Unrestricted sale to land developer	-1.0	2200	-2200	50

- Programmatic EIS Relationship to the HCP – Land transactions that involve forested acres within the HCP would be planned for and scheduled with enough predictability to ensure DNRC stays within the tolerance limits of the Land Transaction Proportionality Rules. Land transactions that result in DNRC dropping below tolerance limits would need to be cancelled or delayed until additional concurrent transactions resulted in tolerance-limit compliance.

3.2.6.3 State Forest Land Management Plan (SFLMP), Rules, Access, and Sustained Yield

The SFLMP, approved by the State Land Board in June 1996, guides the management of the forested Trust Lands. Approximately 480,000 acres of Trust Lands are currently classified as ‘forest’. This guidance is provided in the form of general management philosophy and specific resource management standards. The strategic guidance provided by the SFLMP is summarized in this excerpt:

Our premise is that the best way to produce long-term income for the trust is to manage intensively for healthy and biologically diverse forests. Our understanding is that a diverse forest is a stable forest that will produce the most reliable and highest long-term revenue stream. Healthy and biologically diverse forests would provide for sustained income from both timber and a variety of other uses. They would also help maintain stable trust income in the face of uncertainty regarding future resource values. In the foreseeable future timber management will continue to be our primary source of revenue and primary tool for achieving biodiversity objectives.

In addition to providing programmatic direction for forest-management actions, the SFLMP also provides for the pursuit of other income opportunities on forested Trust Lands as summarized in this excerpt:

We would pursue other income opportunities as guided by changing markets for new and traditional uses. These uses may replace timber production when their revenue exceeds long-term timber production revenue potential. Where we pursue non timber uses, we may not comply with the biodiversity elements of this alternative. Opportunities might include development rights on a parcel of waterfront land with high recreation potential; home site development; leasing an entire drainage with substantial low-elevation old growth to a coalition of environmental groups; or a land exchange program designed to increase the average income-producing value of our holdings. However, because we expect these other income opportunities to occur on a minor amount of the forest acreage, these uses would not compromise the overall fundamental premise of managing for biodiversity.

The SFLMP also addresses conflicting land uses and recreational opportunities as summarized in the following excerpts:

- **Conflicting Land Uses**

- *We would consider adjusting our management activities so they are compatible with adjacent lands, when doing so is consistent with the general philosophy of the SFLMP (the word "alternative" was used in the original text, but was replaced with SFLMP for clarity in this document).*
- *We would coordinate activities with adjacent landowners on a case-by-case basis.*
- *When conflicts did occur, we would consider covenants or conservation licenses as long as the trust was adequately compensated. These covenants or licenses may not fully comply with the biodiversity elements of this alternative. However, because we expect these other income opportunities to occur on a minor amount of the forest acreage, these uses would not compromise the overall fundamental premise of managing for biodiversity.*

- **Recreational Opportunities**

- *General recreational use (currently defined as including noncommercial and non-concentrated hunting, fishing, and other activities determined by the land board to be compatible with the use of State lands; general recreational use does not include the use of streams and rivers by the public under the stream-access law provided in Title 23, Chapter 2, Part 3) would be allowed on legally accessible lands with the purchase of a Recreational Use License.*
- *Cabin sites would continue to be leased and new ones developed where appropriate.*
- *We would develop recreational opportunities as guided by the changing markets for new and traditional uses. These land uses may not comply with the biodiversity elements of this alternative. However, because we expect these other income opportunities to occur on a minor amount of forest acreage, and such*

site-specific changes in use will be subject to further environmental review, these uses would not compromise the overall fundamental premise of managing for biodiversity. These activities would only be pursued where the revenue potential exceeds that of current use or complements the current use.

- Rules – In February 2003, the State Land Board approved Forest Management Administrative Rules that provide programmatic direction for the Forest Management Program. These rules are written in support of the resource management standards contained within the SFLMP. These rules apply to all timber-management activities initiated as of the date of acceptance of these rules by the State Land Board.
- Programmatic EIS Relationship – The relationship between the general management philosophy and strategic guidance provided by the Programmatic EIS and the SFLMP exists three ways:
 - Timber Management Program Predominant, But other Uses Coexist - Lands where timber management would be the primary predominant use, but secondary uses covered by the Programmatic EIS simultaneously exist, and the secondary uses are compatible with timber management (e.g., general recreational use). The SFLMP would direct the timber management activities and the programmatic EIS would direct the secondary uses. If a conflict arises between the primary and secondary uses, the direction from the SFLMP and associated documents would prevail.
 - Real Estate Program Predominant - Lands where timber management would be replaced as the primary predominant activity by proposed uses covered under the Programmatic EIS. The proposed use *a)* has successfully progressed through the Funnel Filtration process; *b)* has demonstrated revenue generation that exceeds the long-term timber production potential, and *c)* has use(s) that conflict with the strategy and direction in the SFLMP. DNRC would change the classification of these lands from ‘classified forest’ to ‘classified other’ (e.g., industrial/commercial development), and these lands would be managed under the direction and strategic philosophy of the programmatic EIS.
 - Real Estate Program Predominant, But Timber Management Uses Coexist - Lands where timber management would be replaced as the primary predominant activity by proposed uses covered under the Programmatic EIS. The proposed use *a)* has successfully progressed through the Funnel Filtration process; *b)* has demonstrated revenue generation that exceeds the long-term timber production potential, and *c)* includes timber management as a secondary use, but in a manner that conflicts with the strategy and direction in the SFLMP (e.g., residential development with a large

tract of designated open space held under a conservation easement). Land reclassification to "other" would not occur on the managed forest portion of the affected property. The strategic direction and philosophy for the developed acres would come from the programmatic EIS. The direction corresponding to timber management would come from specifications established within the lease, license, or easement that authorized the change in primary use. These specifications may not comply with the biodiversity elements of the SFLMP. If conflicts arise between the two primary uses, the direction from the Programmatic EIS, associated documents, and lease/license/easement would prevail.

- Access – The SFLMP and the rules direct DNRC to establish transportation systems for the minimum number of road miles, built to a minimum standard necessary to avoid unacceptable adverse impacts. In many cases, potential Programmatic EIS uses would require a different standard. When timber management remains the predominant use, SFLMP direction would prevail, unless a secondary use provides for funding and adequate analysis to warrant a different standard. When Programmatic EIS uses are predominant, Programmatic EIS direction or specifications in the document authorizing use would prevail.
- Timber Management Sustained Yield – For lands where timber management remains the primary predominant use, secondary Programmatic EIS uses that occur simultaneously should have minimal affect on the sustained yield. Any affect would be captured in the regularly scheduled sustained yield calculation (at least every 10 years).
- For lands where the primary, predominant use changes from timber management to another use that results in land reclassification, the sustainable yield may be affected. However, it is not anticipated that the affect would be of the magnitude requiring immediate adjustments; therefore, any corrections would occur during the regularly sustained-yield calculation schedule (at least every 10 years).
- For lands that change the primary predominant use from timber management to another use but timber management remains, to some extent, as a continued opportunity, the sustained yield may or may not be affected. These types of actions would need to be evaluated on a case-by-case basis to determine whether sustained-yield adjustments are necessary before the next scheduled sustained-yield calculation. This type of evaluation would look at the number of affected acres, the productivity from those acres, and the change in the direction for timber management on those acres.

3.3 DESCRIPTION OF RELEVANT RESOURCES RELATED TO THE PHYSICAL AND BIOLOGICAL ENVIRONMENT

3.3.1 Geology and Soil

3.3.1.1 Introduction

This section describes the general geology and soils present throughout Montana. Descriptions assume that parent materials are distributed evenly across all ownerships. The USDA Natural Resources Conservation Service (NRCS), USDA Forest Service (USFS) and DNRC have completed detailed descriptions of soils across Montana. Information presented in this section was derived from the State Forest Land Management Plan Final Environmental Impact Statement. Detailed soils information for planning and evaluation of projects is kept at DNRC offices throughout the state.

3.3.1.2 General Statewide Overview

Soil is a basic natural resource essential for human survival. Rich, healthy soil provides economic opportunities for growth and development. State lands cross a diverse landscape of soils, varying with changes in geologic parent material, climate, vegetation and age of weathering.

The diverse topography of Montana is the result of several geologic forces acting over millions of years. We can group soils on state lands according to the bedrock or parent material deposits in which the soils are forming. The western third of the state is characterized by the Rocky Mountains, which began forming approximately 70 million years before present.

Soil in the Northwest, Southwest and Central Land Offices is typically young with weakly defined soil horizons. Soil in extreme northwestern Montana is overlain with a mantle of volcanic ash that is less pronounced to the east and south. Soil in the Northeastern, Southern, and Eastern Land Offices is typical of those that occur under grasslands and in cool and dry moisture regimes. Surface soil layers are typically fine textured loams though range from silty clay to sandy loam. Northeastern Montana soil is derived from glacial till. Soil in the Eastern Land Office typically has high erosion rates due to poor infiltration and high run-off. Soils are moderately deep, generally fine-textured, poorly drained, calcareous, alkaline, and saline; and typically contain a large amount of rock. The soil surface is mostly bare ground often with a white salt crust (ABI 2001). Soil of southeastern Montana is typically derived from shales, siltstone, clay stone, and sandstone.

3.3.1.3 Regional Overview

- Northwestern Land Office--Mountain ranges in the Northwest Land Office areas are generally long and relatively narrow, trending north-south, and separated by wide glaciated valleys. Mountain slopes, ridges, and cirque lands were strongly shaped by alpine glaciation. The soils of the DNRC Northwestern area include deep glacial tills, outwash deposits, and

residual soils forming from weathered bedrock. The bedrock types are mainly quartzites, argillites, and limestone formations of resilient Belt precambrian rocks. These relatively young soils have weak development and commonly have gravelly loam and gravelly silt loam textures. A high percentage of forest lands have a productive volcanic ash-influenced light surface soil that retains moisture and nutrients important to plant growth. Forest growth potential is highest in this area of the state because of its precipitation levels and productive soils. Valley soils are comprised of alluvium, glacial outwash and lacustrine deposits and are used for agricultural purposes as well as home sites, acreages and urban areas.

The TLMD manages approximately 314,400 acres of Trust Lands in the Northwestern Area. Approximately 50% of these acres have slopes greater than 25% or are in the floodplain.

- Southwestern Land Office--Mountain ranges in the Southwest Land Office areas are generally long and relatively narrow, trending north-south, and separated by wide glaciated valleys. Western Montana mountains within the Southwest Land Office, are composed of shale, quartzite, limestone, and a variety of igneous rocks and are characterized by high elevation ranges and high plateaus (Alwin 1983). Mountain slopes, ridges, and cirque lands were strongly shaped by alpine glaciation. Bedrock/parent material types are more diverse in the Southwestern area than in the Northwestern, and so are the soils. Roughly one-quarter of these lands have a volcanic ash-influenced surface, which increases soil productivity. Some of the more sensitive soils are forming in granitics on the Sula State Forest. Intermountain valleys are composed of alluvium, glacial till, outwash, and lacustrine sediments. Valley elevations range from approximately 1,800 to 4,500 feet. The forest soils of the DNRC Southwestern area are mainly residual soils weathering from bedrock, with some glacially-influenced soils. Forest productivity is more moderate in this area due in part to lower precipitation rates and more droughty soils. Valley soils are greatly influence by glaciation, and lake bed deposits. Much like the Northwestern area, agriculture, home sites, and urban uses dominate the valleys.

The TLMD manages approximately 233,500 acres of Trust Lands in the Southwestern Area. Approximately 37% of these acres have slopes greater than 25% or are in the floodplain.

- Central Land Office--The Central Land Office contains the Rocky Mountain Range from the Canadian border south to Idaho and Wyoming borders. Glaciation has modified most alpine areas. Valley bottoms are usually composed of unconsolidated sediments. Foothills, terraces, fans, and floodplains that formed in alluvium, outwash, and lacustrine sediments occur throughout the area. The Rocky Mountain front contains thrust faulted and folded mountains composed of sedimentary and metasedimentary rocks. These mountains contain argillite, siltite, and

quartzite in the northern regions; mudstone and sandstone in the middle region; and, limestone and dolomite in the southern region. The Bitterroot Valley and surrounding mountains are glaciated fault-block mountains formed from complexly folded and faulted sedimentary and igneous rocks. The Beaverhead Mountains are composed of block-faulted mountains and foothills formed in gneiss, volcanics, and a variety of metasedimentary bedrock. The Yellowstone Plateau contains steep dissected mountains and high elevation uplifted plateaus formed from volcanic and metasedimentary rock. Volcanics are most apparent within Yellowstone National Park where islands of gneiss and schist occur within andisite and rhyolite ridges. Surrounding mountain ranges are formed from sedimentary and metamorphic rocks with inclusions of volcanic rock. Intermontane valleys formed in alluvium and tertiary sediments divide the steep mountains.

The TLMD manages approximately 1,254,500 acres of Trust Lands in the Central Area. Approximately 16% of these acres have slopes greater than 25% or are in the floodplain.

- Northeastern, Eastern, Southern Land Offices--The eastern two-thirds of the state is essentially a broad plain, punctuated in the middle third by island mountain ranges. Much of the current landscape was shaped within the last two million years, during which several glacial episodes occurred in Montana. The central and east-central portions of the state are characterized by prairies dissected by major drainages, and isolated 'island' mountain ranges. In general, the land slopes eastward from the foot of the Rocky Mountains to the North Dakota border. The Belt mountains are a group of island mountains, rolling foothills, and uplifted mountains that contain bedrock consisting of sandstone, shale, limestone, mudstone, and metasedimentary rocks; with isolated areas of volcanics, igneous intrusions, and gneiss. North of the Missouri River to the Canadian border, the landscape is broken by many potholes and moraines, remnants of the last glacial episode, approximately 12,000 years ago. Southeastern Montana is characterized by broad prairies underlain by sedimentary rocks, and often eroded into badlands, and flat-topped buttes. The Big Horn and Pryor Mountains formed in limestone, sandstone, and shale and are composed of dissected plains, hills, slopes, terraces, and fans. The area is nearly flat to steep (1 to 80% slope), and has contouring micro benches on middle or lower slopes. Elevations in eastern Montana range from 4,000 feet in the island mountains to 2,000 feet in the northeastern corner.

The TLMD manages approximately 2,003,300 acres of Trust Lands in the Northeastern Area, 382,120 acres in the Southern Area, and 965,750 acres in the Eastern Area. Approximately 2.5% of these acres have slopes greater than 25% or are in the floodplain.

3.3.2 Water Resources

3.3.2.1 Introduction

In this section, the current condition of the water resources is described in terms of lakes, streams, and wetland and riparian areas across Montana. The discussion centers on water distribution, sources of pollution and extent of impairment to these watershed resources.

3.3.2.2 Regulatory Framework

While water quality and quantity protection is the responsibility of all individuals, Montanans have developed regulations to ensure the protection of Montana's waters. In addition to the state regulations, local and federal regulations such as the Clean Water Act and have been passed to provide for clean water. Existing regulations that may require permits are listed below in Table 3-14. Although this list is not considered complete, it covers the most common regulations.

Table 3-14. Water Related Regulations

Regulation/Permit	Purpose or requirements	Agency Responsible
<i>Montana Stream Protection Act (SPA 124 Permit)</i>	Protect and preserve fish and wildlife resources and to maintain stream and rivers in their natural or existing state.	Montana Fish, Wildlife and Parks
<i>Montana Floodplain and Floodway Management Act</i>	To restrict floodplain and floodway areas to uses that will not be seriously damaged or present a hazard to life, if flooded, thereby limiting the expenditure of public tax dollars for emergency operations and disaster relief	Local floodplain administrator, county planner, sanitarian, building inspector, town clerk or county commissioner
<i>Federal Clean Water Act (404 Permit)</i>	To restore and maintain the chemical, physical, and biological integrity of the nation's waters.	U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency
<i>Federal Rivers and Harbor Act (Section 10 Permit)</i>	To protect the quality and quantity of navigable waters in the United States. Montana waters included are all or part of the Missouri River, Yellowstone River and Kootenai River	U.S. Army Corps of Engineers
<i>Short-term Water Quality Standard for Turbidity (318 Permit)</i>	To provide a short-term water quality turbidity standard for construction activities, protect water quality and minimize sedimentation. Activities must be carried out in accordance with conditions prescribed by the Department of Environmental Quality.	Montana Department of Environmental Quality
<i>Montana Land-Use License or Easement on</i>	To protect riparian areas and the navigable status of the water body and	Department of Natural Resources and Conservation,

Table 3-14. Water Related Regulations

Regulation/Permit	Purpose or requirements	Agency Responsible
<i>Navigable Waters</i>	to provide for the beneficial use of state lands for public and private purposes in a manner that will provide revenues without harming the long-term capability of the land or restricting the original commercial navigability.	Trust Land Division
<i>Montana Water Use Act (Water Right Permit)</i>	To provide a permit and certificate system of water rights administration, maintain a general adjudication of all existing water rights in the state, and to implement a centralized record system in addition to the local courthouse records.	Department of Natural Resources and Conservation, Water Rights Bureau
<i>Montana Water Use Act (Water Reservations)</i>	To provide water for existing and future beneficial uses of water, and to maintain a minimum flow, level or quality of water.	Department of Natural Resources and Conservation, Water Rights Bureau
<i>Storm water Discharge General Permits</i>	To prevent degradation of state waters from pollutants such as sediment, industrial chemicals or materials, heavy metals, and petroleum products; protect existing water quality; and, to implement and monitor the effectiveness of best management practices used to reduce pollutant loads.	Montana Department of Environmental Quality
<i>Public Water Supply Watersheds</i>	Requires the submission, review and approval of detailed plans and specifications before beginning the construction of any new railroad, logging road, electric or manufacturing plant in a public supply watershed.	Montana Department of Environmental Quality
<i>County Septic System Regulations</i>	Requires approval for anyone proposing to construct, alter, extend or operate a sewage treatment and disposal system.	County Sanitarian
<i>General Mining Laws</i>	Requires permit for operating a placer, dredge, hard rock, coal, sand or gravel mine on private or public land	Montana Department of Environmental Quality
<i>Lakeshore Protection Act</i>	Requires permit private individuals and government entities proposing to do work in or near a body of water with a county's jurisdictional area.	County Government
<i>Montana Dam Safety Act</i>	Applies to construction, repair or removal of any dam that impounds 50 acre-feet or more at normal operating	Department of Natural Resources and Conservation, Water Operations Bureau

Table 3-14. Water Related Regulations		
Regulation/Permit	Purpose or requirements	Agency Responsible
	pool.	Dam Safety Program
<i>Montana Pollutant Discharge Elimination System (MPDES permit)</i>	Applies to all discharges to surface or groundwater including those related to industrial, municipal, and other commercial discharges.	Montana Department of Environmental Quality
<i>Montana Water Quality Act</i>	Prohibits the pollution of state waters and the placement of wastes in a location where they are likely to cause pollution of any state water.	Montana Department of Environmental Quality
<i>National Pollutant Discharge Elimination System</i>	This permit is much like the MPDES permit, except for the jurisdiction. The NPDES permit is used for permitting on the Flathead Reservation.	U.S. Environmental Protection Agency

3.3.2.3 Assumption for Current Uses

Potential impacts to water quality from current special use lease holders is related to the distance from a surface water body and the terrain between the use location and water body. Sediment delivery efficiency is higher on steep ground due to gravity. Transport of nutrients, organic and inorganic compounds are equally more efficient on steeper terrain. While Montana has a wide range of terrain with varying degrees of steepness, this section does not attempt to individually locate leases. Instead, this section categorizes uses other than grazing, agriculture and timber and describes the potential impacts that may occur without mitigation, best management practices, or development standards. Several state and federal agencies require mitigation as a condition of environmental permitting.

- Commercial -- Commercial leases includes office buildings, retail space, golf courses, restaurants, television stations, animal feedlots, livestock corrals, advertising signs, beehives, gravel storage, fire stations, community halls, developed recreation sites such as public fishing accesses, campgrounds, ski trails, athletic fields, equestrian trails, rifle/archery ranges and other similar uses.

Within this category, current impacts to water quality vary with the degree of development as well as the proximity to surface water. Office buildings, retail space, restaurants, television stations, community halls and fire stations with paved/asphalt areas may have increased storm runoff of inorganic and organic compounds, oil, grease, nutrients, and sediment. Increased nutrients from sewer systems may also be present. Leases such as athletic field, fishing accesses, campgrounds and ski trails may have increased nutrients in runoff from fertilizers and/or sewer systems and increased sediment delivery potential due to vegetation removal. Animal feedlots and livestock corrals have increased potential for nutrient and

sediment delivery from animal waste and vegetation removal. Impacts to water quality are minimal from uses such as beehives and advertising signs.

Other state and federal agencies such as the Montana Department of Environmental Quality and the US Environmental Protection Agency under the Clean Water Act generally regulate impacts to water quality within this category. These agencies require mitigations and design features to ensure water quality standards are met.

Within the commercial category, current leaseholder use requirements range widely. On the high end of the scale, it is estimated that restaurants use 7-10 gallons per patron per day. On the lower end of the scale, water use per beehive is negligible. Regardless of the use requirements, leaseholders are bound to water availability (legally and physically) as permitted by the DNRC Water Resources Division.

- Conservation -- Conservation leases include nature trails, wildlife areas/refuges, natural areas, and similar situations where development potential is constrained.

Water quality impacts related to conservation leases are limited to sediment delivery from roads, trail and stream crossings.

- Industrial -- Industrial leases include manufacturing, highway maintenance shops, fire lookouts, airports, military training sites, sanitary landfills, electrical substations, effluent distribution sites, grain bin locations, pipelines for oil/gas/water, and reclamation sites from mining.

Current industrial leases may impact water quality from nutrients, organic and inorganic compounds and toxic materials. Sanitary landfills likely impacts groundwater as waste materials leach into the groundwater and eventually mix with surface waters. Airports and highway maintenance shops potentially impact surface water quality from roadway de-icing materials, sediment and petroleum products. In addition to the impacts from road and runway related impacts, sewer systems may impact water quality with nutrients. Reclamation sites likely have existing impacts to water quality from mining debris. In addition, sediment may be loosened and transported to surface water bodies. Lesser degrees of potential impacts to water quality are likely occurring from grain bin sites, although nutrient delivery is possible. Effluent distribution sites have the potential for nutrient transport to surface water bodies during runoff events.

- Residential -- Residential leases include leases for home/cabin sites, lawns, outbuildings, water wells and similar uses.

Cabin sites are generally near lakes or in aesthetically pleasing locations or homesteads associated with farming and ranching. Home/cabin sites near

surface water may impact water quality by increasing sediment from driveways and nutrients from septic systems and lawn fertilizers. In addition, vegetative filters may be reduced or eliminated by the lessee in an effort to improve aesthetics. Many of the home/cabin sites leases currently incorporate development standards to minimize impacts, however several leases were developed prior to standards that reduce or eliminate impacts to water quality.

3.3.2.4 General Statewide Overview

Montana is dissected by approximately 166,708 miles of streams and contains more than 691,826 acres of named ponds, lakes and reservoirs greater than 5 acres each (DEQ, 2002). Freshwater wetlands and riparian areas cover between one and five percent of the state (DNRC, 1996).

Despite their relatively small land area, riparian-wetland communities occupy a unique position on the landscape, with their importance far exceeding their total area. The abundance of shelter, water, and forage make these areas attractive for many animal species. Riparian zones support a greater concentration of wildlife species and activities than other locales on the landscape (Thomas et al 1979, Pfister and Batchelor 1984, Oakley et al 1985 (SFLMP).

In addition, these areas play a critical role, both hydrologically and geomorphically, in the stream ecosystem. Bank stability, water quantity, stream temperature, and water chemistry are all functions of the health of the streamside plant community.

- Surface Water Distribution -- Three major river systems drain most of the land surface in Montana. West of the Continental Divide, in the *Southwestern* and *Northwestern* Land Offices, the Clark Fork River and its tributaries flow generally westward, entering the Columbia River and eventually discharging into the Pacific Ocean near Portland, Oregon. East of the Divide, the Missouri and Yellowstone rivers and their tributaries flow generally north and eastward, joining in western North Dakota and eventually entering the Mississippi River and discharging into the Gulf of Mexico near New Orleans, Louisiana.

Lesser drainage systems include the Kootenai River in extreme northwestern Montana, which enters the state from Canada and flows through Idaho and eventually into the Columbia River; the St. Mary's River system flowing north into Canada and the Hudson Bay drainage; and several small rivers in extreme eastern Montana flowing east into North Dakota and the Little Missouri River drainage.

Major tributaries of the Clark Fork River include the Flathead, Bitterroot, and Blackfoot rivers. Dams have been built on the Clark Fork and Flathead rivers for hydroelectric power generation and flood control.

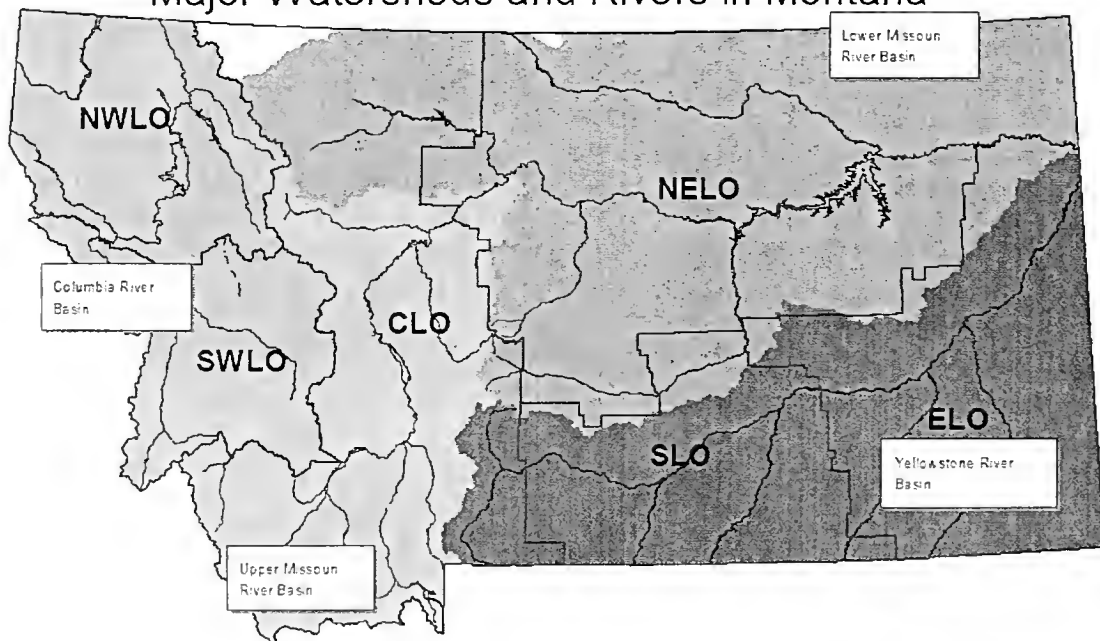
The Missouri River is formed by the convergence of the Jefferson, Gallatin, and Madison rivers near Three Forks, Montana within the *Central*

Land Office. It flows north and east to the confluence with the Yellowstone River near the Montana – North Dakota border in the *Northeastern Land Office*. Tributaries include the Marias, Musselshell, and Milk rivers. A number of dams have been built in the Missouri River system, including three near Helena, four near Great Falls, and one near Fort Peck. Fort Peck Reservoir is the largest man-made body of water in the state. These dams provide hydroelectric power, flood control, and irrigation water (MDoA 1992).

The Yellowstone River originates in Yellowstone Park and flows north and east into eastern Montana through the *Southern* and *Eastern Land Offices*, joining the Missouri River in western North Dakota. Major tributaries include the Stillwater, Clark's Fork of the Yellowstone, Bighorn, Tongue, and Powder rivers. No dams have been built on the Yellowstone, though there are a number of irrigation diversions along its course. The river's water is primarily used for irrigation and domestic purposes (MdoA 1992). Figure 3-6 displays the four major watersheds and the major rivers in Montana.

Figure 3-6

Major Watersheds and Rivers in Montana



- Surface Water Quality – All Land Offices -- Surface water quality varies widely across Montana. Because of geology, streams and rivers in western

Montana are generally high quality water, with low levels of dissolved solids and sediment. Streams and rivers flowing through eastern Montana are slower, lower gradient, and often contain high quantities of sediment and dissolved solids from natural conditions and agricultural runoff; including nitrates from fertilizer and manure.

The Montana Department of Public Health and Human Services (MDPHHS) has developed standards limiting the levels of pollutants released into surface water. Water quality standards are based on stream classification, and are set by administrative rule (ARM 16.20.601 *et seq.*).

Montana water bodies are classified according to the present and beneficial uses that they normally would be capable of supporting. The state Water-Use Classification System (ARM 17.30.604-629) identifies the following beneficial uses:

- Drinking, culinary use, and food processing
- Aquatic Life support for fishes and associated aquatic life, waterfowl, and furbearers
- Bathing, swimming, recreation and aesthetics
- Agriculture water supply
- Industrial water supply

Approximately 94% of the total stream miles assessed in Montana fully support all their designated uses (derived from 2002 305(b)). Streams not meeting the beneficial use are considered impaired. An "impairment" was defined as the violation of some water quality standard, whether qualitative or quantitative. According to the Montana 2002 Assessment Database, approximately 9,661 miles of stream and 489,583 acres of lakes and wetlands are considered impaired. Table 3-15 displays the distribution of impaired water bodies by watershed.

Table 3-15: Surface Water body Impairments by Watershed		
Watershed	Miles of Impaired Stream	Acres of Impaired Lakes/Wetlands
Columbia	2,550	162,427
Upper Missouri	3,083	62,293
Lower Missouri	3,079	256,711
Yellowstone	949	8,152
<i>Total</i>	<i>9,661</i>	<i>489,583</i>

From Montana §305(b) Report (2002)

The Water Quality Division of MDEQ, in compliance with the federal Clean Water Act §305(b), is required to submit a biennial report to the EPA on the status of the state's water quality. The Montana §305(b) report provides an overview of Montana's surface water quality assessment program. It is a companion to the *2002 Montana 303(d) List: A Compilation of Impaired and Threatened Water bodies in Need of Water Quality Restoration*. As required by the federal Clean Water Act, the *303(d) List* focuses on those

waters in the state, which have been assessed as having one, or more of their beneficial uses impaired by human-caused pollution. Four impairment classifications were used in the 2002 Sufficient Credible Data (SCD) Assessment.

- o *Fully Supporting Water Bodies* had no significant or known use impairments.

- o *Threatened Water Bodies* were also Fully Supporting water bodies, but at risk of degradation.

- o *Partially Supporting Water Bodies* had one or more uses slightly or moderately impaired, but with most uses supported.

- o *Not Supporting Water Bodies* had one or more uses severely impaired, but with most uses supported.

Table 3-16 quantifies the impairments by beneficial use for streams assessed during the 2002 SCD assessment process. The causes of impairment that affect the most miles of streams and rivers are (1) other habitat alterations, (2) flow alteration, (3) siltation, and (4) metals. The largest sources of impairment, which may not be directly related to the causes of impairment, include agriculture (crop and grazing related), hydromodification and resource extraction.

Table 3-16. Stream Impairment Status

	Applicable Miles Assessed	Fully Supporting	Not Supporting	Partial Support	Threatened	Insufficient Data
Aquatic Life Support	20,099	2,007	1,998	6,243	0	9,851
Cold Water Fishery	11,948	951	1,943	4,334	8	1,748
Warm Water Fishery	8,343	972	113	2,363	0	4,895
Drinking Water Supply	14,533	4,004	2,796	215	0	7,548
Primary Contact (Recreation)	20,099	4,725	556	2,931	136	11,752
Agriculture use	14,533	8,330	98	714	0	5,391
Industrial Supply	14,533	7,965	168	1,004	0	5,396

Modified from Montana §305(b) Report (2002)

Table 3-17 quantifies the impairments by beneficial use for lakes, ponds, reservoirs and wetlands assessed during the 2002 SCD assessment process. The causes of impairment that affect the largest acreage of lakes, reservoirs

and wetlands are (1) metals, (2) mercury, (3) noxious aquatic plants, and (4) lead. The largest sources of impairment, which may not be directly related to the causes of impairment, include atmospheric deposition, agriculture, resource extraction and abandoned mining.

Table 3-17. Lake/wetland/reservoir impairment status

	Applicable Acres Assessed	Fully Supporting	Not Supporting	Partial Support	Threatened	Insufficient Data
Aquatic Life Support	604,760	80,861	6,733	188,019	7,550	321,597
Cold Water Fishery	547,296	202,547	6,971	40,611	7,550	289,617
Warm Water Fishery	61,366	3,040	300	13,180	0	44,846
Drinking Water Supply	591,761	172,012	301,809	953	0	116,988
Primary Contact (Recreation)	604,760	205,107	38,512	270,803	0	90,338
Agriculture use	591,761	233,157	3,628	48,753	0	306,224
Industrial Supply	591,761	286,757	3,628	3,778	0	297,599

From Montana §305(b) Report (2002)

The TLMD manages trust lands surrounding several streams considered to be impaired for one or more beneficial uses. Table 3-18 displays the miles of streams and acres of lakes/wetlands/reservoirs within these managed lands.

Table 3-18: Impaired Water Bodies under DNRC Trust Land Management by Land Office

Land Office	Miles of Impaired Streams	Acres of Impaired Lakes, Wetlands and Reservoirs*
Central Land Office	120	21.6
Eastern Land Office	6	0
Northeastern Land Office	128	0
Northwestern Land Office	48	1.9
Southern Land Office	7	23.6
Southwestern Land Office	50	0
Total	359	47.1

*Additional impaired lakes may be found within Trust Land section, however these lakes are considered navigable and are not considered to be Trust lands.

- Ground Water Resources – Statewide -- Groundwater occurrence, distribution, quantity, and quality depends on many site-specific factors, including climate, geology, and topography. There are two broad classifications of water-bearing formations in Montana: consolidated and unconsolidated aquifers (MdoA 1992). Both classifications occur across Montana.

Consolidated aquifers are found in rock formations dating from Pre-Cambrian to Tertiary age, and may be in sedimentary, metamorphic, or igneous rocks. Water may be found in interstices of the original rock, or in fractures, fissures, and cavities that have formed in the original rock formation. Water movement in these formations is highly variable. It is often less than in unconsolidated formations, but may be relatively fast in well-connected fracture systems. The volume of water is usually less than in unconsolidated aquifers because of the relatively small spaces in bedrock systems (MdoA 1992).

Unconsolidated aquifers are generally found in alluvial deposits, glacial deposits, or from mass-wasting processes. They are formed of gravel, sand, silt, clay, and boulders, and reach their greatest development in montane valleys, where they may reach several hundred feet thick (MdoA 1992). In other areas, they range from 10 to 100 feet thick. Coarse grained, well-sorted deposits usually have high rates of water movement (dozens of feet per day) whereas small grained or poorly sorted deposits have low rates of water movement (a few feet or less per day)(MdoA 1991). The majority of groundwater obtained in Montana is from alluvial (stream-deposited) aquifers. In eastern and north-central Montana, water movement is considerably slower in these aquifers than in western and south-central Montana. This is partly due to the precipitation differences in these locations.

Water quality in both consolidated and unconsolidated aquifers is generally good throughout the state, though contamination is present in some locations. Sources of local contamination may include septic systems, underground storage tanks, injection wells, mineral processing, agricultural wastes, miscellaneous spills, and uncontrolled releases of hazardous wastes. The severity of impacts to groundwater depends upon a number of factors, including type and volume of contaminant, hydrogeologic setting, and existing uses of groundwater (MdoA 1992).

- Riparian Areas and Wetlands – Statewide -- A large portion of this section has been adapted or reprinted from the State Forest Land Management Plan Final Environmental Impact Statement (1996). Additional information on riparian and wetland areas can be obtained from this source.

Riparian areas have been described as zones of transition between upland and aquatic environments in which vegetation and microclimate are strongly influenced by the aquatic system (Gregory et al 1991). A more visually descriptive definition would be that riparian areas are green zones associated with lakes, reservoirs, estuaries, potholes, springs, bogs, fens, wet meadows, and ephemeral, intermittent, or perennial streams.

Hall (1988) reported that riparian ecosystems can be changed by management activities such as livestock grazing, timber harvesting, road building, or through natural factors such as fire, stream energy and beaver activity. Other wildlife activities that affect riparian conditions are known to occur, at least locally. However, since wildlife species are not concentrated or restricted by fences, as are livestock, it is generally felt that impacts from wildlife are negligible when considered statewide.

Analysis of historical conditions suggests that the integrity of riparian areas has been compromised by the often-combined effects of beaver removal, large organic debris removal, logging, livestock grazing, and road construction. The impact of these activities on plant communities, stream morphology, and water quality and quantity depends on the care taken to minimize and mitigate damage from such activities. Mountain riparian ecosystems probably have not changed as much as more accessible lowland floodplain areas. Meehan (1991) provides a good summary of the effects of physical disturbances and forest and rangeland management activities on the water resource.

Significant degradation of Montana wetlands began with beaver trapping in the early 1800's. In the last 100 years the rate of change in riparian areas has increased significantly due to ever growing human pressures. As land values and product demands increased, there was great economic pressure to plant, graze, harvest, and build as much as feasible. Some of these sites were associated with wetland or riparian areas and were significantly affected by these human activities.

- Status of Riparian Areas and Wetlands – Statewide -- A broad scale description of the condition of the state's wetland and riparian conditions can be made. The Montana Riparian and Wetland Association characterizes wetlands and riparian areas as either Functional, Functional-At-Risk, or Non-Functional.

Functional wetlands or riparian areas are capable of filtering sediment, maintaining stream bank stability, building banks, dissipating water energy, storing water and aquifer recharge, among others.

Functional-At-Risk connotes wetlands or riparian areas that are presently capable of functioning properly but are in danger of decline through natural or human activity.

Non-Functional, as the name indicates, are those wetlands or riparian areas that are not functioning properly.

Functioning wetland and riparian areas can be found throughout Montana, but they are usually small and isolated. Glacier National Park and Jewel Basin in the Flathead National Forest, two large functioning riparian areas, are exceptions to this rule. Throughout the state, however, most wetlands are classified as Functional-At-Risk or Non-Functional.

The riparian areas in the eastern part of the state are the most strongly affected, primarily along smaller streams. Many stream riparian areas are significantly degraded. In fact, very few prairie streams have not been altered in terms of riparian vegetation, riparian function, stream stability, or wildlife habitat (Hansen, personal communication as cited in DNRC, 1996). The vast majority of east-side riparian areas are classified as Non-Functional to marginally Functional-At-Risk. Scattered small mountain ranges (e.g., Snowy, Judith, and Belt Mountains) show signs of significant riparian impacts but are still functional. The majority of these riparian areas are Functional-At-Risk; some are Non-Functional. The impact on the east side of Montana may be directly related to the ease of human and animal access to wetlands and riparian areas.

The rugged mountains and broad intermontane valleys in Western Montana can be divided into two areas: Northwest and Southwest. The Southwest shows some fairly significant riparian degradation from livestock grazing. The impact of silviculture is not nearly as severe as that of grazing, but is nonetheless important (Hansen, personal communication as cited in DNRC, 1996). Riparian function in Southwest Montana seems to be between Functional-At-Risk and Non-Functional.

In the Northwest portion of Montana, livestock grazing is not as prevalent as in the Southwest, but silvicultural impacts are most widespread there. Overall, riparian function is higher than in the Southwest but is still only Functional-At-Risk in the majority of reaches. In general, the lower the elevation in mountainous regions, the greater the degradation of wetland and riparian resources due to their accessibility and the human desire to build homes and other structures in these areas.

Characterizing a statewide trend in riparian condition would be a tenuous effort at best. However, considering the amount of publicity and time devoted to educating landowners about the inherent worth and productivity of riparian areas in combination with state and federal legislative efforts aimed at protecting them, we may assume that the steep downward trend in riparian condition has leveled a bit in recent years. Certainly areas do exist where riparian condition has improved or degraded measurably, but as a whole the trend is probably toward less degradation.

3.3.2.5 Regional Overview

This section gives a brief overview of the water resources and Other Uses in each land office. In general terms, uses are consistent across the state within each of the four use categories except for residential. Table 3-19 exhibits other use acreages in each category by land office.

Table 3-19. Acres Categorized as Other by Land Office					
Area Office	Commercial	Industrial	Residential	Conservation	Total
NWLO	859	132	824	0	1,815
SWLO	208	80	826	0	1,114
CLO	365	657	298	13,713	15,033
NELO	107	3	574	760	1,444
SLO	227	2	100	160	489
ELO	10	0	148	0	158
<i>Total</i>	<i>1,776</i>	<i>874</i>	<i>2,770</i>	<i>14,633</i>	<i>20,053</i>

- Northwestern Land Office -- The Clark Fork River is the largest river flowing within the boundaries of the Northwestern Land Office (NWLO). The Flathead River is the major tributary to the Clark Fork River in the NWLO boundary. The Kootenai River is the other major river system in the NWLO.

The Flathead River watershed drains the north portion of the Clark Fork basin. Headwaters for this system originate in Glacier National Park, the Bob Marshall Wilderness and Canada. Flathead Lake, the largest freshwater lake in the United States west of the Mississippi River, is positioned in the middle of the Flathead River system.

The Kootenai River originates in Canada, flows through the northwest corner of Montana into Idaho and back into Canada before discharging into the Columbia River. Although the Kootenai River drains only about three percent of Montana, it discharges more water than the Yellowstone or Missouri Rivers. Lake Koocanusa reservoir—created by Libby Dam-- is the second largest reservoir in Montana for capacity and impounds approximately 48 miles of the Kootenai River.

Trust Lands within the Northwestern Land Office area are randomly located across the landscape except for the Stillwater, Swan River, Coal Creek and Thompson River State Forests. The state forests are blocked or checkerboard ownership and represent approximately 165,700 acres of the 314,400 acres in the Northwestern Land Office jurisdiction. Current

residential uses are generally recreational cabins and many are located on area lakes and streams.

- Southwestern Land Office -- The Clark Fork River basin is the largest basin in the Southwestern Land Office (SWLO) boundary. Major tributaries to the Clark Fork that originate in the SWLO include Blackfoot and Bitterroot Rivers.

Elevations range within the basin from the headwaters within the SWLO including the Pintlar Wilderness (10,700 feet) near Anaconda and the Bitterroot mountains (10,000 feet) to the Cabinet Gorge Reservoir (2,175 feet) where the Clark Fork River leaves Montana. Average discharge of the Clark Fork near the Idaho border is 17,620 cubic feet per second (cfs). Extreme recorded flow ranges from a low of 60 cfs in 1989 to a high of 124,900 cfs in 1964 (USGS 1989). The Clark Fork River Basin includes more than twenty large reservoirs and natural lakes each exceeding 5,000 acre-feet of storage.

Trust Lands within the Southwestern Land Office area are randomly located across the landscape except for the Sula, Clearwater State Forest, and Lincoln State Forests. The state forests are blocked and checkerboard ownership and represent approximately 22,000 acres of the 233,500 acres in the Southwestern Land Office jurisdiction. Current residential uses are generally recreational cabins and many are located on area lakes and streams.

- Central Land Office -- The Missouri River is formed by the convergence of the Jefferson, Gallatin, and Madison rivers near Three Forks, Montana within the Central Land Office (CLO) boundary. Other tributaries to the Missouri within the CLO area include the Sun River, the Dearborn River and majority of the Marias River.

Canyon Ferry Lake, Holter Lake, Clark Canyon Reservoir, Lake Frances, Tiber Reservoir and Hauser Lake are a few of the large bodies of water within the CLO area that are available for a variety of uses.

Trust Lands within the Central Land Office area are randomly located across the landscape. Current residential uses are generally recreational cabins and many are located on area lakes and streams.

- Northeastern, Eastern, Southern Land Offices -- The Missouri River flows north and east to the confluence with the Yellowstone River near the Montana – North Dakota border in the *Northeastern Land Office*. Tributaries include the lower Marias, Musselshell, and Milk rivers. Average discharge near the North Dakota border is 10,660 cfs. Extreme recorded flow ranges

from a low of 575 cfs in 1941 to a high of 78,200 cfs in 1943 (USGS 1989). Fort Peck Reservoir is the largest man-made body of water in the state.

The Yellowstone River originates in Yellowstone Park and flows north and east into eastern Montana through the *Southern* and *Eastern Land Offices*, joining the Missouri River in western North Dakota. Major tributaries include the Stillwater, Clark's Fork of the Yellowstone, Bighorn, Tongue, and Powder rivers. Extreme flows recorded near Sidney, Montana, range from a low of 470 cfs in 1971 to a high of 159,000 cfs recorded in 1921 (USGS 1989). No dams have been built on the Yellowstone, though there are a number of irrigation diversions along its course. The river's water is primarily used for irrigation and domestic purposes (MdoA 1992).

Trust Lands within the Northeastern, Eastern and Southern Land Office areas are located across the landscape in a general pattern of Section 16 and Section 36 for each township. Current residential uses are generally homesteads although with year round residents although some recreational summer cabins exist.

3.3.3 Fisheries

3.3.3.1 Introduction

In the simplest terms, the fishery resource is comprised of the physicochemical properties of water and the surrounding environment and the biological components that support the 85 recognized species of fish found in Montana. Most of the trust land management activities affect fish populations only indirectly, through impacts on the aquatic environment in which they live. Consequently, this assessment focuses on the aquatic environment.

In the remainder of this section, we describe the current condition of fisheries resources using representative species as indicators. We discuss species in terms of their historical and current distribution in Montana lakes, rivers, and streams.

3.3.3.2 Regulatory Framework

Montana Fish, Wildlife and Parks (MFWP) is the state agency charged with managing Montana's fisheries resources. While fisheries population management is a large part of their objectives, habitat management, both directly and indirectly, is undertaken by MFWP.

Other agencies within Montana maintain and/or improve habitat a variety ways on lands under their jurisdiction. Maintaining riparian areas, wetland and implementing forestry best management practices are a few of the methods employed.

Laws and regulations that pertain to fisheries are also those that relate to water quality. A table of applicable laws can be found in section 3.3.2 of this document.

3.3.3.3 Assumptions

The wide dispersal of state lands throughout Montana, with the aquatic environment running through many different ownerships, makes describing the aquatic environment on state lands difficult. We do not have extensive, quantitative data for state lands alone; however, since fish habitat is intrinsically related to overall water quality, for the level of evaluation appropriate for a state-wide programmatic plan, we assume:

- Fish habitat quality is directly correlated with water quality.
- Water quality on state lands is directly correlated with water quality on adjoining lands.

The rationale for accepting overall water quality conditions as representative of fish habitat quality on state land is as follows. The water quality assessment was based on “source” parameters such as agriculture, silviculture, resource extraction, and hydromodification; and “cause” parameters such as nutrients, siltation, thermal modification, and suspended solids. These same parameters directly affect fish habitat.

Also, the same authorities legally responsible for water quality protection promote fisheries habitat protection. Water quality standards stipulate “water quality must be suitable for propagation of salmonid fishes and associated aquatic life” (ARM 16.20.618).

Water quality protection through proper watershed management is an important component of maintaining fish habitat. Healthy aquatic systems are important to ecosystem integrity and the fisheries resource. Wildlife is recognized as an important resource to many people, and fisheries are an important part of Montana's wildlife resource. Fisheries concerns relate to all these issues. The following are among the most important ways that human activities affect fisheries in Montana.

- Habitat Alteration: Aquatic habitat can be adversely affected by a variety of land and water uses including timber harvest, mining, livestock grazing, road construction, subdivision development, and point sources of water pollution such as sewage treatment plants.
- Water Management: Reservoir operations, downstream flow fluctuations, and de-watering affect fish abundance and distribution.
- Introduced Species: Introduced species impact native species due to hybridization, predation, and competition for forage, habitat and spawning sites.
- Angler Demands: The estimated total angler use in Montana in 2001 was 2,748,106 angler days (Scott Rumsey, personal communication, 2003).

3.3.3.4 General Statewide Overview

Montana has a diverse fishery due to its geologic history and geographic setting. Montana contains headwaters of three major drainage basins (Columbia, Missouri/Mississippi, and Saskatchewan) and contains numerous low to high elevation streams and lakes. The state contains both warm water and cold-water fisheries. There are 2,000 natural lakes, 50 reservoirs of 500 acres or larger, 15,000 miles of cold water streams, and 1,300 miles of warm water streams. In addition, there are thousands of smaller reservoirs and thousands of miles of intermittent streams, many of which support some fish populations. Approximately 1% of Montana's surface area is covered

by water. There are 85 fish species present in Montana with about 50 of these believed to be native to the state.

The cold-water fishery is dominated by three introduced trout species (rainbow, brown, and brook trout). Native trout (cutthroat trout, bull trout, and arctic grayling) have incurred local as well as widespread population declines. Diversion of water for irrigation purposes and dams on major drainages has contributed to the decline of native trout, as have introductions of non-native species. Although native to the Saskatchewan River drainage system, the lake trout has been introduced to Flathead Lake west of the Continental Divide. Two species of salmon have also been introduced into larger reservoirs. Cold-water fish species are very sensitive to dewatering of streams and rivers during summer. Maximum water temperature becomes a critical factor in dewatered streams (Brown 1971).

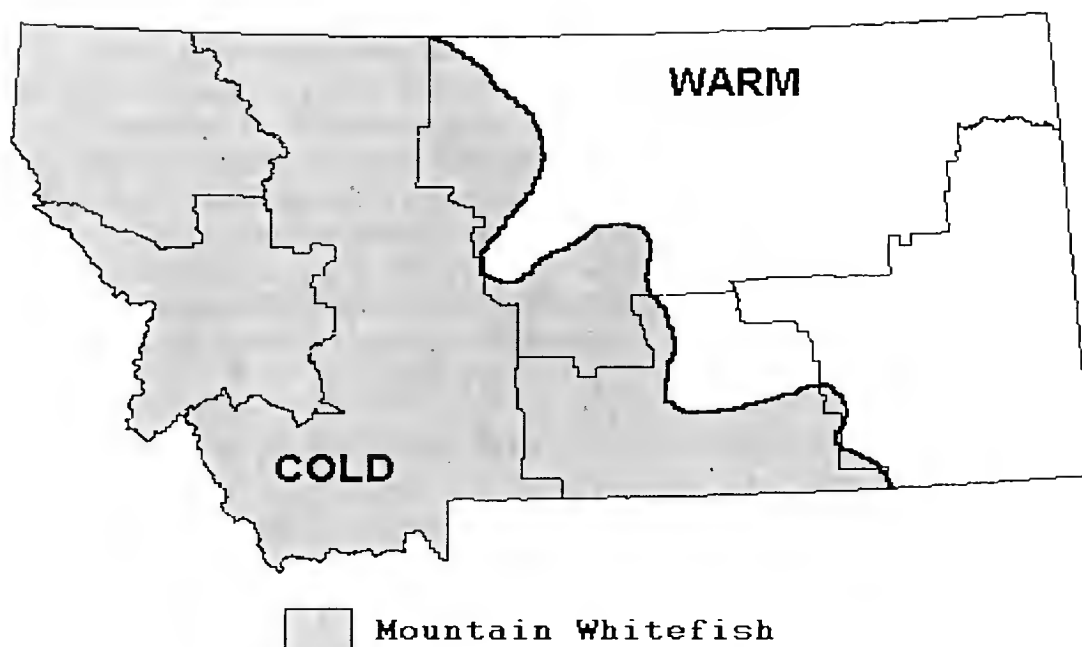
Montana has several unique warm water fish species including the paddlefish, three species of sturgeon, and burbot. Many of the native fish species on major drainages are migratory and dam construction on these drainages has impacted several of these species. Warm water fish species tend to be more tolerant of heavy sediment loads and warm water than cold-water fish. The walleye and northern pike are two warm water fish species that have been extensively introduced into Montana and continue to thrive (Brown 1971).

Of the 85 species of fish found in Montana, 55 species are native, 30 are introduced. Some of these species are declining, with 18 native species presently listed as species of special concern. While the Pallid Sturgeon and White Sturgeon (Kootenai River population) are the only fish listed as endangered in Montana, the bull trout is listed as threatened and the fluvial arctic grayling is considered as a candidate species for listing. A *candidate* species is defined as a species for which the USFWS has sufficient information on biological status and threats to propose to list them as threatened or endangered.

Montana's aquatic environments represent a wide range of conditions, from alpine lakes and snow-fed streams in the West to large, turbid rivers in the East. A correspondingly wide variety of fish species occupy this aquatic habitat. We do not have population inventories or research data to tell us all species that are present in all waters of the state, nor does DNRC have full information on the habitat needs of every species. Therefore, the focus of this assessment is on certain species whose habitat needs are better known, and which probably share habitat associations with many other fish species.

The state is divided into two broad habitats: those that support cold water species, and those that support warm water species (Figure 3-7). The warm water type includes transitional, or cool water species. Because the Mountain Whitefish is very abundant and requires cold, clear water in order to thrive, it can be assumed that waters holding healthy, viable populations of Whitefish indicate the extent of cold water fisheries in the state. Headwaters areas are classified as coldwater if a viable population of mountain whitefish exist in the tail waters of that river system.

Figure 3-7. Assumed Ranges of Cold and Warm Water Fisheries in Montana



DNRC chose bull trout and westslope cutthroat trout to represent the habitat needs of cold water species because these fish are very susceptible to human-induced environmental changes such as decreases in stream flow; increases in temperature, pollution, or siltation; and competition with introduced exotic species. In consultation with other fisheries biologists, the goldeye and largemouth bass have been chosen as representative of warm water species because their habitat requirements are thought to reflect the needs of many other warm water fish.

- **Westslope Cutthroat Trout** -- Westslope cutthroat trout are not as abundant as they once were, and many of those that remain are not genetically pure. The historic range of westslope cutthroat trout in Montana included all drainages west of the Continental Divide; those portions of the Missouri River drainage upstream from Fort Benton; and the headwaters of the Marias, Judith, Musselshell, and Milk Rivers. The distribution and abundance of westslope cutthroat trout has declined in the last 100 years (Liknes 1984). Genetically pure strains are estimated to exist on up to 9% of the historic range in Montana (Shepard et al. 2003). The MFWP lists westslope cutthroat trout as a "species of special concern." They are also on the USFS Region One Sensitive Species list.

Westslope cutthroat trout prefer the cold temperatures typically found in

headwaters areas. In large bodies of water their preferred habitat includes rocks, sandy or rocky shores, and deep waters. In small streams they favor rocky areas, riffles, deep pools, logs and overhanging banks (Everhart and Seaman, 1971; Sigler and Miller, 1963; Brown, 1971).

West of the Continental Divide, the upper Flathead River drainage basin contains the largest population of westslope cutthroat trout in Montana. The area currently occupied corresponds to about 85 percent of the historic range in that drainage, and about 58 percent of the known pure strains statewide are located there. The Clark Fork River drainage (below the mouth of the Bitterroot River) may have the second largest population. East of the Continental Divide, the Smith River drainage holds the largest population of native westslope cutthroat trout (Liknes, 1984).

Westslope cutthroat trout also populate Montana lakes. Liknes reported that 259 lakes actually do, or are thought to, contain westslope cutthroat trout populations. About six percent of the lakes are known to contain genetically pure strains. Roughly 94 percent of the lakes with pure strains are found within the confines of Glacier National Park. The remaining six percent are found on the Flathead Indian Reservation. Only four lakes or reservoirs east of the Continental Divide were reported to contain populations of westslope cutthroat trout.

- **Bull Trout** -- Thomas (1992) estimated that bull trout currently occupy 42 percent of their native range in Montana. Rothschild and DiNardo (1987) concluded that species such as bull trout with specific requirements are likely to be more sensitive to habitat change and less able to persist in times of change.

The Montana Bull Trout Restoration Team has published Bull Trout Status Reports for the following drainages: Bitterroot River, Blackfoot River, Upper Clark Fork River, Flathead River, and South Fork Flathead River. Additionally, draft documents are available for the following watersheds: Middle Clark Fork, Lower Clark Fork, Upper Kootenai, Middle Kootenai, Lower Kootenai, Swan, and Oldman.

Rieman and McIntyre (1993) state that although bull trout are found throughout larger river systems, spawning and rearing fish are often found only in a small portion of the available stream reaches. Rearing and resident fish often use tributaries of larger river systems, while migratory fish use much more of the entire river drainage.

Bull trout are listed as "threatened" by the USFWS and as a Species of Special Concern by MFWP and the Natural Heritage Program. With the "threatened" listing, the USFWS has separate responsibility under the Endangered Species Act for development of a federal recovery plan and designation of critical habitat. A draft Recovery Plan built on the foundation of state restoration plans and proposed critical habitat were released in November 2002. Approximately 3,319 miles of stream and

217,577 acres of lake/reservoir are proposed as critical habitat, of which 60% is in federal ownership, 1% tribal, 5% state/local and 34% private.

Meehan (1991) gives a complete description of the habitat requirements of the above Salmonids. For an in-depth analysis of the correlation between land management activities and fisheries, see Meehan (1991) and Salo and Cundy (1988).

- **Goldeye and Largemouth Bass** -- The distribution of the goldeye is limited to locations east of the Continental Divide. They normally prefer large river systems, but they are also found in large lakes (Paetz and Nelson, 1970; Trautman, 1980; Brown, 1971). Goldeyes seem to prefer highly turbid waters and do not seem to invade colder water environments.

Largemouth bass are typically found in the southeastern portions of the state. Their preference for warmer water likely precludes movement westward. However, all but the deepest lakes are typically warm enough to support viable populations of largemouth bass.

Neither goldeye nor largemouth bass are considered threatened or sensitive. Their historical range has probably not diminished or changed in Montana.

- **Fish Species of Concern** -- Unless otherwise cited, Montana fishes of special concern were adapted from the Montana American Fisheries Society website located at <http://www.fisheries.org/AFSmontana/index.htm>.
 - *Torrent Sculpin* -- This native fish inhabits rubble and gravel riffles of rivers and, to a lesser extent, rocky lake shores. According to the Montana Fisheries Information system, this species is found only in the Northwestern Land Office boundary (Page and Burr, 1991).
 - *Spoonhead Sculpin* -- The spoonhead sculpin is listed as a species of special concern due to its limited distribution in Montana. This species is reported to be found in and around Glacier National Park inhabiting swift creeks and rivers as well as lakes (Page and Burr, 1991).
 - *White Sturgeon* -- In Montana the white sturgeon is found exclusively in the lower reaches of the Kootenai River. This species was listed in 1994 as endangered by the USFWS. This fish is a bottom feeder and will eat almost any available organism, dead or alive, including plant material, crustaceans, worms, insect larvae, and detritus.
 - *Pallid Sturgeon* -- The pallid sturgeon was listed by the USFWS as endangered in 1990. It is restricted to the Missouri and Mississippi Rivers and their large tributaries (Lee et al. 1980; Ashton and Dowd 1991). They were once found from the headwaters of the Missouri

River in western Montana to New Orleans, Louisiana, some 3,400 river miles, but only small portions of this historic range now provide suitable habitat.

- *Paddlefish* -- The paddlefish is an ancient, mostly cartilaginous fish with smooth skin and is a close relative of sturgeons. Paddlefish are found in Montana in the Missouri Yellowstone River basins. Montana is the most westerly state with paddlefish.
- *Shortnose Gar* -- Shortnose gar distribution in Montana is limited to primarily the Missouri River below Fort Peck dam. Typical habitat for the gar is large rivers, quiet pools, backwaters and oxbow lakes. Due to the limited distribution, little is known about this species within Montana.
- *Yellowstone Cutthroat Trout* -- This subspecies was petitioned for listing as a threatened species under the Endangered Species Act in 1998. The petition was rejected by the USFWS in 2001, however the Yellowstone cutthroat trout is considered as a species of special concern by several state and federal agencies in Montana. Distribution in Montana includes the Yellowstone, Bighorn and Tongue River basins.
- *Westslope Cutthroat Trout* -- This subspecies of cutthroat trout is native to Montana on both sides of the Continental Divide with populations in the Kootenai and Clark Fork River basins as well as the headwaters of the Missouri and Saskatchewan Rivers. The USFWS has been petitioned to protect the Westslope Cutthroat trout under the Endangered Species Act. In 2000, the USFWS determined that the listing was not warranted due to the species wide distribution, available habitat in public lands and conservation efforts underway by state and federal agencies.
- *Columbia River Redband Trout* -- The Columbia River redband trout is considered a subspecies of the rainbow trout. The Kootenai River drainage population of redband trout is Montana's only native rainbow trout and represents the furthest inland penetration of redband trout in the Columbia River basin.
- *Bull Trout* -- Bull trout, a threatened species, are native to Montana and are found in many lakes, rivers, and streams in northwestern Montana in the Flathead and Clark Fork river drainages. They generally migrate upstream into smaller streams to spawn. Their populations have declined due to a number of reasons, including habitat degradation and competition with other trout species. The St. Mary's River in the Saskatchewan basin, draining north into Canada contains the only bull trout population east of the Continental Divide in the United States.

- *Fluvial Arctic Grayling* -- The arctic grayling, a candidate species, is a native fish with relict populations surviving in the upper Missouri River drainage. It has also been introduced into a number of high elevation lakes with tributaries suitable for spawning. Its distribution is now in northwestern, southwestern, and south-central Montana.
- *Sturgeon Chub* -- The sturgeon chub is widespread and commonly found in eastern Montana. More recent collections have found this species is widely distributed in the Missouri, Yellowstone and Powder rivers in Montana.
- *Sicklefin Chub* -- The sicklefin chub is currently listed as a species of special concern by the State of Montana. The first observation of the species was in 1979 in the middle Missouri River upstream of Fort Peck Reservoir. Current distribution includes the Missouri River above Fort Peck Reservoir, the lower Missouri River above the Yellowstone River confluence and the lower Yellowstone River.
- *Pearl Dace* -- The Pearl Dace inhabits pools of creeks and small rivers as well as ponds and lakes. Montana is considered to be on the periphery of the species range.
- *Blue Sucker* -- The Blue Sucker is found in the Missouri River as far up as Great Falls, and in the Yellowstone River upstream of Forsyth, Montana. This species prefers swift current areas of large rivers and feeds on insects in cobble areas. Spawning occurs in tributaries to the larger rivers. The Tongue, Marias, Milk and Teton rivers are the most heavily used for spawning.
- *Trout-perch* -- In Montana, the trout-perch occurs in the South Saskatchewan River Basin, which drains northeastern Glacier National Park and the northwestern portion of the Blackfeet Indian Reservation.
- *Sauger* -- The sauger inhabits sand and gravel runs, sandy and muddy pools and backwaters of small to large rivers; less often uses lakes.
- *Northern Redbelly X Finescale Dace Hybrid* -- This hybrid is fairly widespread east of the continental divide. The hybrid was placed on the species of concern list due to its rarity and unusual form of genetic reproduction.

3.3.3.5 Regional Overview

This section briefly describes the general habitats in each land office. Table 3-20 displays the presence of Species of Special Concern in each land office boundary.

Table 3-20. Presence of Species of Special Concern by Land Office

Species	CLO	ELO	NELO	NWLO	SLO	SWLO
Torrent Sculpin	-	-	-	+	-	-
Spoonhead Sculpin	+	-	-	-	-	-
White Sturgeon (Kootenai River Population)	-	-	-	+	-	-
Palid Sturgeon	+	+	+	-	+	-
Paddlefish	+	+	+	-	-	-
Shortnose Gar	-	-	+	-	-	-
Yellowstone Cutthroat Trout	+	+	-	-	+	-
Westslope Cutthroat Trout	+	-	-	+	-	+
Columbia River Redband Trout	-	-	-	+	-	-
Bull Trout	+	-	-	+	-	+
Fluvial Arctic Grayling	+	-	-	-	-	-
Sturgeon Chub	-	+	+	-	-	-
Sicklefin Chub	-	-	+	-	-	-
Pearl Dace	-	-	+	-	-	-
Blue Sucker	-	+	+	-	-	-
Trout-perch	+	-	-	-	-	-
Sauger	+	+	+	-	+	-
Northern Redbelly X Finescale Dace	+	+	+	-	+	-

+ Present in Land Office boundary
 - Not present in Land Office Boundary

- Northwestern Land Office -- The fisheries located in the Northwestern Land Office boundary are primarily cold-water fisheries although warm water species such as largemouth bass can be found. Fisheries vary greatly from small, forested headwater streams to large lakes and reservoirs. In many of the streams, introduced species such as brook trout compete with native species. Lakes in the Northwestern Land Office area also have introduced species such as the lake trout, which competes with native species. A result of the competition is hybrid fishes and reduced native species densities.
- Southwestern Land Office --Much like the Northwestern Area, the fisheries located in the Southwestern Land Office boundary are primarily cold-water fisheries although warm water species such as largemouth bass can be found. All of the potential impacts associated with introduced species exist in the Southwestern Land Office.

- Central Land Office -- The fisheries in the Central Land Office represent both warm and cold water species. Due the transitional nature of the Central Land Office boundary, fish habitat diversity is greater than in the other land office boundaries. The headwater streams contain cold water species while the lakes and larger rivers are within the range of warm water fishes.
- Northeastern, Eastern, Southern Land Offices -- Warm water fisheries are primarily found in these land offices although cold-water species are present. Large bodies of water such as Fort Peck reservoir contain a wide variety of fish species.

3.3.4 Wildlife

Montana is a state with a great diversity and abundance of wildlife. Over 650 vertebrate wildlife species have been recorded in Montana, many of which may, at least in part, rely on Trust Lands for their habitat needs. With the exception of most of the species of concern and big game animals, reliable population data is lacking for most species of wildlife in Montana. Additionally, widely accepted research data is lacking on the precise relationships between individual species and their habitat needs. The purpose of this overview is to provide baseline data from which inferences in Chapter IV can be drawn concerning which wildlife species may be adversely and favorably affected.

General Statewide Overview

The majority of mammals that were present at the time of European settlement likely still occur in the state. With nearly 11,000 feet between the lowest and highest points in the state, there is considerable variation in elevation, and concomitantly, habitats. High plains influenced by a continental climate, with mild summers and harsh winters, dominate the eastern 2/3 of Montana. As indicated in the vegetation section, this portion of the state is dominated by grassland and shrub steppe habitats with lush riparian habitats along the major drainages. Isolated mountain ranges support ponderosa pine and Douglas-fir forests. Mountains and valleys that experience a maritime-influenced climate with more precipitation and moderate temperatures characterize the western 1/3 of Montana. Habitats are largely coniferous forests dominated by ponderosa pine, Douglas-fir, lodgepole pine, subalpine fir, western larch, and grand fir. Intermountain valleys are dominated by grassland and sagebrush steppe habitats. Riparian habitats are common along bodies of water and numerous wetlands occur.

Over 94 million acres of wildlife habitat exists within the state. Foresman (2001) identified 108 mammal species known to occupy the state of Montana. Lenard et al. (2003) identified 409 bird species (of which 259 are known to breed in the state), while Maxell et al. (2003) reported 13 amphibians and 17 species of reptiles that occupy the varied habitats within the state. If you exclude the 106 irregular or accidental bird species from this number you are left with a total of 441 wildlife species that could occur on state lands affected by this document. Table 3-21 displays the distribution of species by taxonomic class.

Table 3-21. Number of wildlife species that have been observed in Montana summarized by taxonomic class.

Seasonal/Migratory Status	Amphibians	Reptiles	Birds	Mammals	Total
Seasonal or Year-long Resident	13	17	259	108	397
Migrates Through State	-	-	44	-	44
Accidental or Vagrant	-	-	106	-	106
Total	13	17	409	108	547

- Mammals
 - Ungulates – Mule deer and white-tailed deer are the most abundant and widely distributed big game species in the state, and along with elk are the most commonly pursued big game species. Both deer species are distributed statewide. Mule deer prefer open montane habitats and sagebrush slopes, but will also use coniferous and hardwood forests. White-tailed deer tend to be more ubiquitous, using a wide variety of habitats from forested habitats to open, semi-arid plains. Elk are associated with coniferous mountain habitats in western and central Montana and in coniferous habitats along major drainages in eastern Montana. If not disturbed, elk will also use riparian habitats along major drainages. Although elk utilized open grassland habitats in eastern Montana prior to settlement of the prairies, current elk populations use extensive areas of conifer forests for security cover. Consequently, elk are sensitive to cover loss in forested areas. Elk will often avoid areas intensively grazed by cattle, especially during the growing season. Pronghorn antelope are currently found in most large blocks of shrub/grassland habitat east of the Continental Divide in Montana.

Hunting opportunities for moose, bighorn sheep, and mountain goats are more limited. Moose are restricted to the forested, mountainous western one-third of Montana both east and west of the Continental Divide. Riparian communities are common foraging habitats for moose. Major moose populations are located in the Northwestern and Southwestern Land Offices. Bighorn sheep originally occurred throughout much of Montana wherever suitable habitat was found; in areas of excellent habitat they were often abundant. In Montana they are restricted to semi-open habitats comprised of precipitous terrain with rocky slopes, ridges and cliffs, or rugged river breaks and badlands. Bighorn sheep in mountainous areas are migratory, moving to lower elevations or windblown ridges during winter to avoid deep snow. Mountain goats were originally restricted to mountain ranges in northwestern Montana, but they have been introduced to many other mountain ranges east and west of the Continental Divide. Like bighorn

sheep, mountain goats make altitudinal migrations, seeking windblown ridges or low elevation cliffs during winter and high elevation cliffs during summer. There are probably less than 2,000 mountain goats in Montana. Bison were historically the dominant ungulate in Montana occupying the short-grass prairies, but were nearly extirpated by 1886. One wild herd resides seasonally in Montana and is associated with Yellowstone National Park.

- Carnivores – Grizzly bears, gray wolves, and lynx are further discussed as threatened, endangered, or species of concern in succeeding sections of this sub chapter. Black bears are distributed throughout coniferous forests within the Northwestern, Southwestern and Central Land Offices and are generally restricted to mountainous terrain. Although black bears are omnivorous, plants tend to comprise most of their diet. The mountain lion was only recently removed from the predator list and classified as big game to provide the species with greater protection and to carefully regulate its harvest. Mountain lions have expanded their range considerably in recent years and now occupy a variety of habitats throughout the State; mountain lions are largely restricted to more wooded habitats that provide cover for hunting.

The swift fox is a grassland fox that was extirpated from Montana early in the 20th century, but now has established populations near Browning, Chinook, Malta, and Glasgow within the Eastern Land Office. The river otter and mink are associated with riparian habitats. Wolverine, marten, and fisher are associated with mountainous coniferous habitats in western Montana. The bobcat is widely distributed in Montana both east and west of the Continental Divide and uses any habitat that provides dense hiding cover. Several species, including red fox, striped skunk, several weasels, coyotes, and raccoons, are habitat generalists, using a wide range of habitat conditions. Badgers are largely dependent upon grasslands, particularly open plains and shrub-steppe habitats.

- Small mammals – Several groups of species, including rodents, hares and rabbits, bats, and shrews are large, diverse groups of species that use most if not all habitats within the state, and therefore will be dealt with as a group. Some inhabit waterways and associated wetland and riparian habitats (e.g. beaver and northern bog lemming), where both water-based activities and shoreline activities influence available habitat. Several species are associated with forested habitats (e.g. northern flying squirrels, snowshoe hares, and hoary bats) while others are tied to alpine and subalpine habitats (e.g. hoary marmots and Columbian ground squirrels). Several rely upon open grassland plains (e.g. northern grasshopper mouse and white-tailed jackrabbit) and semi-arid areas dominated by sagebrush (e.g. desert cottontail and Merriam's shrew). Some bats rely on altered habitats such as mine shafts and

bridges for roosting locations. Meanwhile a large number of these species are habitat generalists that use a variety of habitats within the state (e.g. big brown bat and deer mice). Black-footed ferrets and black-tailed prairie dogs are discussed in succeeding sections of this sub-chapter as threatened, endangered, or species of concern.

- Birds – The diverse geography, ecology, and climate contribute to the variety of birds found within the state. There have been 409 bird species recorded in Montana, though 106 are considered rare (less than 20 sightings). There are 259 species that are confirmed breeders in the state (Lenard et al. 2003). Within Montana, many species reach the edges of their geographic ranges, adding to the state's avian diversity. Bird species that may be of special importance to management activities occurring on state lands include a number of federally listed threatened and endangered species (discussed elsewhere), state species of special concern (discussed elsewhere), raptors, upland game birds, waterfowl and shorebirds, woodpeckers, and migrant songbirds. There are 12 species designated as upland game birds, but only nine of these have hunted populations. There are also 23 species designated as migratory game birds; most of these are waterfowl but also included are mourning dove, sandhill crane, and common snipe. Bald eagles, whooping cranes, interior least terns, piping plovers, and yellow-billed cuckoos are discussed in succeeding sections of this sub-chapter as threatened, endangered, or species of concern.
 - Upland game birds – Upland game bird species include forest grouse (blue grouse, spruce grouse, ruffed grouse), shrubland grouse (sharp-tailed grouse and sage grouse), white-tailed ptarmigan, and introduced species such as wild turkey, ring-necked pheasant, gray (Hungarian) partridge, and chukar. The forest grouse tend to be found within the western portions of the state. Sharp-tailed grouse, ring-necked pheasant, and gray partridge tend to inhabit a mixture of grasslands, frequently interspersed with agricultural fields and/or shrubby habitats. Sage grouse also utilize open spaces, but tend to rely more on the semi-arid sagebrush plains in the eastern portion of the state. Chukar are a rare bird, which is also found in semi-arid, open areas, notably steep, rocky, areas in south-central Montana. Wild turkeys are locally abundant where they inhabit open forests intermixed with grasslands and agricultural areas. Within Montana, turkeys have expanded their range to include more of eastern Montana as well. Shrubland species are known to be sensitive to habitat changes and have concentrated breeding sites (leks), therefore developments within these habitats could affect these species.
 - Birds of Prey – Birds of prey include kites, hawks (including eagles and falcons), osprey, and owls. In Montana, there are 34 species that make up this group of birds (Lenard et al. 2003). A number of birds of prey are widely distributed throughout the state, including the red-tailed

hawk, American kestrel, prairie falcon, Northern harrier, and golden eagle. Species associated with open country including prairies and broad open valleys include ferruginous hawk, Northern harrier, rough-legged hawk, American kestrel, gyrfalcon, golden eagle, short-eared owl, and burrowing owl. Birds of prey most often associated with open timber or woodland include red-tailed hawk, sharp-shinned hawk, merlin, turkey vulture, flammulated owl, great-horned owl, and northern saw-whet owl. Species frequently found in relatively dense forest include Cooper's hawk, northern goshawk, and boreal owl. Several owl species require a combination of open country with some trees for roosts, nests, and perches. A number of birds of prey are often associated with nearby open water, including lakes and large rivers. These species include osprey, bald eagle, and peregrine falcon.

- Waterfowl – Waterfowl include ducks, geese, and swans. There are three swan species (including one introduced species, mute swan), five goose species, and 29 duck species (Lenard et al. 2003). Waterfowl are closely associated with wetlands, riparian areas, and open water. Many species, particularly geese and dabbling ducks, frequently forage in upland areas, particularly agricultural areas where they consume waste grain and green plants. Some waterfowl are habitat generalists and use an array of available bodies of water, while others are habitat specialists and only use specific habitats such as flat water, prairie potholes, or high gradient streams. Many of the waterfowl species found in Montana spend the nesting season in the state and migrate south during the winter. A smaller set of waterfowl is commonly seen in Montana during their spring and fall migrations between northern nesting grounds and southerly wintering grounds, but do not spend appreciable time in the state.
- Gulls, Waders, and Fish-Eating birds – This group includes pelicans, cormorants, herons, bitterns, rails, plovers, sandpipers, American avocets, stilts, gulls, terns, and cranes. Like many of the waterfowl species previously discussed, many of these species are associated with wetlands, riparian areas, and open water. Some, like gulls, terns, great blue herons, and double-crested cormorants, are colony nesters, and disruption and disturbance at these sites is expected to have a greater effect on these species than several other species. Several others, such as rails, cranes, and phalaropes, are non-colonial breeders that nest in riparian areas, shorelines, and wetlands. Also like many of the waterfowl species, disturbances near shores, wetlands, and within riparian areas are most likely to negatively affect this group.
- Woodpeckers and Other Cavity-Nesting Birds – Several species of woodpeckers (primary cavity nesters) and secondary cavity-nesting birds occur in Montana. These species tend to rely on snags and snag recruits within the forested portions of the state. Loss of snags and

snag recruits to firewood gathering and timber harvesting has the greatest potential impact to this group of birds.

- Songbirds – There are approximately 111 species of songbirds in Montana (Lenard et al. 2003). Many of these species breed in Montana during spring and summer months and migrate southward to Central and South America to spend the winter months. This group includes sparrows, vireos, warblers, and flycatchers. Populations of many of these bird species have been declining due primarily to habitat loss and habitat fragmentation. Roads, development, and other human disturbance have bisected large patches of forested habitats into smaller fragments with greater amounts of edge habitats. Many species of songbirds are associated with riparian habitats, thus fragmentation or loss of riparian areas will have a greater impact on this group of birds.

While considerable attention has been paid to the fragmentation of forested habitats and the subsequent declines to forested interior bird species, grassland/shrubland and savannah songbirds have probably seen more precipitous declines in recent past. Grassland birds show the most consistent declines of any group of birds monitored by the Breeding Bird Survey. Factors responsible for these declines include the loss of suitable habitats as well as an increased mowing of the remaining grasslands for hay production.

- Reptiles and Amphibians – There are 12 native and 1 introduced amphibian species that inhabit Montana. These include three species of salamander, four toads, and five frog species. Bullfrogs have been introduced in Montana prior to 1968 and are presently documented across appreciable portions of the state. Amphibians are usually associated with moist habitats, many are aquatic or semi-aquatic, and all breed in water. Some are common and widely distributed, and others are quite restricted in range. Several species are commonly found in nearly all types of uplands near water sources, including forests, grasslands and prairies, alpine meadows, and sagebrush flats. Several species are somewhat rare in Montana or their populations are declining (including several on the species of concern list).

Reptiles include turtles, snakes, and lizards. There are 3 turtle species, 4 species of lizards, and 10 snake species in Montana. Some of these are common and widely distributed (painted turtle, Western rattlesnake, Western terrestrial garter snake), and some have very specialized habitats or are quite restricted in range in Montana (including several that are on species of concern list).

- Sensitive, Threatened or Endangered Wildlife Species – The Montana Natural Heritage Program (MNHP) lists 89 terrestrial vertebrate species of special concern including threatened and endangered species (Carlson

2003). This list includes listed 5 amphibians, 9 reptiles, 48 birds, and 27 mammals (Carlson 2003). Listed species includes taxa that are rare, endemic, disjunct, threatened, or endangered throughout their range or in Montana, vulnerable to extirpation from Montana, or in need of further research. The list also encompasses species that have a special designation by organizations or land management agencies in Montana, including: Bureau of Land Management Special Status and Watch species; U.S. Forest Service Sensitive and Watch species; U.S. Fish and Wildlife Service Threatened, Endangered and Candidate species.

Of these 89 species, 3 are classified as Endangered (whooping crane, black-footed ferret, and the interior least tern) and 5 are classified as Threatened (bald eagle, piping plover, Canada lynx, grizzly bear, gray wolf) under the Endangered Species Act. The black-tailed prairie dog and the Yellow-billed cuckoo are candidates for listing (USFWS 2003).

- Whooping Crane – The whooping crane is listed as endangered by USFWS. Birds from this population migrate through Montana and the Dakotas in the fall from August to October, and in the spring from April to June. This species has been documented at several locations in eastern Montana and near wetlands in the Yellowstone Plateau area (USFWS 1994, Meine and Archibald 1996). While migrating, whooping cranes roost standing in the shallow water of marshes, flooded crop fields, artificial ponds, reservoirs and rivers. Wetlands surrounded by tall trees or other visual obstructions, or marked with dense vegetation are not used; whooping cranes select sites with wide, open panoramas. Sites must also be isolated from human disturbances. During migration cranes eat aquatic animals, plant tubers, roots and waste grain in crop fields.
- Black-footed Ferret – The USFWS lists the black-footed ferret as a federally endangered species. Black-footed ferrets once occupied a majority of the semiarid grasslands of the Great Plains. Populations suffered declines due to the eradication of prairie dog colonies. Black-footed ferrets have been reintroduced into a few areas near Malta in northeastern Montana. Black-footed ferrets are nocturnal predators that inhabit grassland habitats and depend on prairie dogs for food.
- Interior Least Tern – In Montana, interior least terns breed on flat, sparsely vegetated to barren sand and gravel bars associated with the Missouri and Yellowstone River systems. Open, wide river channels and lake or pothole shorelines are characteristics of preferred nesting habitat in the state. Shallow depressions for nests are usually placed high on the sandbars away from waters edge to avoid high water flows early in the year. Interior populations of the least tern winter along the Gulf of Mexico and on Caribbean islands.

- Bald Eagle – The bald eagle is listed as threatened by the USFWS. Bald eagles are diurnal raptors associated with significant bodies of water, such as rivers, lakes, and coastal zones. The bald eagle diet consists primarily of fish and waterfowl, but includes carrion, mammals, and items taken from other birds of prey. Preferred nest-stand characteristics include large emergent trees that are within site distances (typically less than 1 mile) of lakes and rivers and screened from disturbance by vegetation.
- Piping Plover – Piping plovers breed in three geographic regions: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. The Great Plains population is listed as threatened by USFWS. The Great Plains population spends fall to early spring along coastal areas in the Gulf of Mexico. Segments of this population breed along rivers and lakes in Montana. Suitable habitat in Montana includes sand, gravel, and alkaline shores along lakes and rivers (Gaines and Ryan 1988, Lenard et al. 2003). Breeding sites are typically composed of sand, pebbles or gravel on exposed beaches. Riverine habitats, particularly river islands and sandbars are also important, including along the Missouri River. Plovers tend to be site specific, returning to the same breeding areas year after year.
- Lynx – The threatened lynx is distributed throughout western and central Montana. The distribution and abundance of lynx is closely associated with snowshoe hares, their primary prey. Primary lynx habitats are subalpine-fir types with abundant coarse woody debris for denning; however, lynx will use a mix of species compositions (subalpine fir, lodgepole pine, Douglas-fir, grand fir, and western larch) as well as lodgepole pine stands (Ruediger et al, 2000). Lynx generally forage in young coniferous forests with plentiful snowshoe hares. Mature, densely forested cover facilitates movement and provides habitats for red squirrels, which are an alternative prey source for lynx. Canada lynx are generally found between 4,000 to 7,000 feet in elevation in western Montana and between 5,500-8,000 feet on the east side of the Continental Divide (Ruediger et al, 2000).
- Grizzly Bear – Grizzly bears, listed as threatened, typically inhabit mountainous, forested areas in Montana. Preferred grizzly bear habitats are meadows, riparian zones, avalanche chutes, rockslides, subalpine forests, alpine meadows, and big game winter ranges, all of which provide seasonal food sources (USFWS 1993). The Grizzly Bear Recovery Plan identified 4 recovery areas within Montana, including the North Continental Divide, Cabinet/Yaak, Yellowstone, and Selway/Bitterroot Recovery Zones (USFWS 1993). Grizzlies are occasionally recorded in other areas but are usually thought to be transients. Disturbance is a major influence on effectiveness of habitat for grizzly bears; today grizzlies remain largely in large tracts of

relatively undisturbed land. Roads, logging, mining, human settlement, grazing, and recreation could negatively impact grizzly bears, with roads and associated human disturbance likely providing the biggest threat to grizzly bear habitats (Mace et al. 1996, Mace and Waller 1997).

- Gray Wolf – Wolves in Montana were extirpated by the 1940s, but expanded their range from Canada back into Montana beginning in the 1970s. Now, wolves are breeding in several locations within western and central Montana and have recently been down-listed to Threatened by the USFWS. The Northern Rocky Mountain Wolf Recovery Plan defines 3 recovery areas for the gray wolf, including the Northwestern Montana and Yellowstone Recovery areas within Montana (USFWS 1987). Wolves continue to expand their range and packs from the Central Idaho recovery area now reside in Montana as well. Wolves met the biological requirements for recovery in the northern Rockies in 2002 (USFWS et al. 2003). Conservation and management plans for Idaho, Montana, and Wyoming are needed prior to federal de-listing. Montana Fish, Wildlife, and Parks (FWP) recently completed the Final Environmental Impact Statement for the Gray Wolf Conservation and Management Plan in which FWP recommends that the State of Montana adopt a wolf conservation and management plan (Montana FWP 2003).

Wolves are a wide-ranging species whose habitat contains adequate vulnerable prey and minimal human disturbance. Primary prey species in Montana are white-tailed deer, elk, moose, and mule deer. Typically, wolves in Montana den in late April. Wolves are most vulnerable to human disturbance at den and rendezvous sites. Wolves choose elevated areas in gentle terrain near a water source (valley bottoms), close to meadows or other openings, and near big game wintering areas for dens and rendezvous sites.

- Black-tailed Prairie Dog – The black-tailed prairie dog, currently listed as a candidate species, inhabits grasslands and sagebrush semi-desert areas in the Dakotas, Nebraska, Kansas, Oklahoma, Texas, Montana, Wyoming, Colorado, New Mexico, Alberta and Saskatchewan. They tend to occupy the lower elevation plains where they develop extensive colonies of interconnected burrows systems (Foresman 2001). Black-tailed prairie dogs are strictly herbaceous feeding on a variety of plant materials, favoring green, perennial grasses and forbs.
- Yellow-Billed Cuckoo – Populations of yellow-billed cuckoos west of the Continental Divide are currently listed as a candidate species (Carlson 2003). Yellow-billed cuckoos inhabit mature deciduous riparian forests (especially cottonwood) with a closed canopy, and will also use deciduous shrubs (e.g., willow, alder), but only if tall trees are present in the vicinity (Montana Partners in Flight 2000). Water,

particularly large, slow moving stream or ponds and lakes, is usually present at most nest territories.

3.3.4.1 Species of Special Concern

The occurrence of species of special concern by Land Office region are shown in Table 3-22.. The Central Land Office supports the greatest diversity of wildlife species and also has the most species of special concern. The administrative region blends the major habitat groups from both eastern and western portions of the state, thereby combining habitats from each and potentially supporting species found in much of the state.

Table 3-22 Status and distribution of species of special concern by land office area (after State Forest Land Management Plan [updated], Final EIS, Montana DNRC 1996).

	DNRC LAND OFFICES						Statewide
	NWLO	SWLO	CLO	NELO	SLO	ELO	TOTAL
Rare Throughout Their Worldwide Range	2	2	5	6	3	4	6
Rare Within Montana	55	55	71	62	63	52	89
Federally Listed as Endangered Under the ESA	0	0	2	3	2	2	3
Federal Listed as Threatened Under the ESA	4	4	5	3	3	2	5
Possibly Appropriate for Federal Listing Under the ESA	1	1	2	2	2	2	2
Listed as Sensitive by USFS Based on Evidence of Current or Predicted Downward Trends in Populations or Habitat capability Sufficient to Reduce Existing Distributions	17	17	19	13	16	11	23
Total Number of Species of Special Concern (All Categories) in Each Land Office	55	55	71	62	63	52	89

- Stewardship Patterns – Government managed lands comprise approximately 35% of Montana, with roughly 29% under federal and 6% under state or local governmental jurisdiction (Refer to Table 2- 1 in Chapter 2). Federal ownership in Montana is dominated by USFS

administered lands (18% of state), which are predominantly in western Montana. Private lands represent an estimated 59% of Montana; these private lands are in higher concentrations in the eastern part of the state where they are intermixed with lands managed by the BLM (9% of the state) and DNRC (Redmond et al. 1998). Within broad categories, public management of forested and unvegetated (rock, snow, badlands, barren, etc) land cover classes is well represented within the state. Public management of shrub and grassland categories, however, is not nearly as well represented, with considerable amounts of each of these classes occurring on private ownership (Table 3-23). Roughly 5.5% of the land surface in Montana could be subject to management under this plan. In general, DNRC directly or indirectly plays a role in managing most habitat types that exist in the state of Montana and by being scattered across the state, a wide spectrum of habitat types and geography could be affected under this plan. Many of these parcels are however, intermingled with a variety of ownership, and therefore the wildlife that use the state sections are more likely to need both the state parcel and these adjacent ownerships to meet life requirements.

- Following general statewide trends in habitat groups, distribution of habitats varies widely between DNRC Land Offices (Table 3-24). Naturally, wildlife species that depend upon these habitats also follow these trends.

Table 3-23. Acreages in Land Use/Land Cover classes for DNRC Trust Lands by Land Office and percentage of that land use/land cover type within the land office boundary represented on state Trust Lands. Data derived from early 1990's Landsat TM imagery (National Land Cover Data for Montana-USGS).

	NWLO		SWLO		CLO		SLO		ELO		NELO	
Open Water	1,309	0%	711	2%	4,221	2%	886	2%	3,426	5%	4,768	1%
Perennial Ice/Snow	10	0%	1	0%	16	0%	0	0%	0	0%	0	0%
Low Intensity Residential	50	1%	22	0%	161	1%	43	0%	0	0%	27	0%
High Intensity Residential	0	0%	5	0%	11	3%	0	0%	0	0%	0	0%
Commercial/Industrial/Transportation	493	2%	220	2%	924	2%	204	1%	371	3%	1,110	5%
Bare Rock/Sand/Clay	253	0%	44	0%	580	0%	121	0%	3,160	7%	5,191	5%
Quarries/Strip Mines/Gravel Pits	0	0%	17	0%	98	3%	1,060	20%	74	1%	147	4%
Transitional – sparsely vegetated	4,031	2%	613	1%	69	0%	0	0%	0	0%	3	0%
Deciduous Forest	1,636	7%	735	5%	6,443	2%	2,896	2%	9,902	5%	10,700	4%
Evergreen Forest	260,598	4%	132,596	3%	97,209	2%	30,408	2%	38,790	5%	48,376	4%
Mixed Forest	59	1%	47	1%	322	3%	134	3%	606	3%	448	3%
Shrubland	17,640	3%	28,393	4%	175,001	8%	41,983	4%	117,202	7%	117,397	6%
Orchards/Vineyards/Other	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Grasslands/Herbaceous	25,459	3%	62,650	5%	792,884	9%	271,205	5%	691,094	7%	1,324,760	9%
Pasture/Hay	1,062	0%	5,477	2%	29,085	4%	1,605	1%	6,522	2%	17,517	4%
Row Crops	0	0%	19	1%	1,233	2%	237	0%	603	2%	1,706	3%
Small Grains	478	0%	234	0%	106,553	4%	16,602	2%	29,465	3%	242,068	5%
Fallow	176	1%	7	0%	31,724	3%	13,828	3%	61,224	4%	225,753	5%
Urban/Recreational Grasses	16	2%	33	1%	138	1%	11	0%	0	0%	3	0%
Woody Wetlands	1,082	5%	1,233	3%	4,780	4%	436	2%	2,747	5%	1,492	2%
Emergent Herbaceous Wetlands	53	1%	528	3%	3,151	5%	399	2%	563	4%	1,587	5%

Table 3-24. Number of Montana wildlife species (omitting accidental bird species) using each of nine general habitats for at least a portion of their seasonal habitat needs within the boundaries of each DNRC land office area (after Montana State Forest Land Management Plan, Final EIS, Montana DNRC 1996).

General Habitat	NWLO	SWLO	CLO	NELO	SLO	ELO	Statewide
Rivers	91	81	81	82	78	70	98
Lakes	100	90	94	96	92	85	113
Wetland or Riparian	280	274	286	279	276	252	318
Alpine	72	73	77	10	9	8	74
Forest	157	158	165	146	151	127	180
Savannah	77	76	79	83	77	79	93
Woodland	194	191	207	199	198	180	232
Shrubland	141	142	157	153	159	144	182
Grassland	205	212	225	223	223	211	256
Regional Totals	398	398	434	405	404	366	441

Habitats missing from this table are not represented on DNRC lands in that land office area. Note that because many species use more than one habitat, regional totals are less than simple sums.

- **Locally Important Habitats** – Although the TLMD manages a relatively small component within the landscape of Montana, a portion of these lands occur within locally important wildlife habitats and are affected by trust management activities. For example, grizzly bear recovery in the Northern Continental Divide ecosystem is dependent upon maintenance of female grizzly bears producing cubs in each of 23 bear management units (USFWS 1993). The Department manages 69 percent of the Stillwater Bear Management Unit. Grizzly bears could not be sustained in the Stillwater Unit without maintaining suitable habitat on these state forestlands.

Wildlife habitat on state lands may also be critical for populations that range over much larger areas. For example, the white-tailed deer herd in the Salish Mountains of Northwestern Montana summers on National Forest lands, but winters on approximately two thousand acres of state forest land west of Kalispell (C. Sime, Montana FWP, unpublished data). The survival of this herd of 3,000 deer may depend on suitable habitat being maintained on that parcel of state land.

Grassland and shrubland habitats may support breeding habitats for several grassland bird species. Grassland birds in North America have been exhibiting the most consistent decline of any group of birds monitored by the Breeding Bird Survey since established in 1966 (Sauer et al. 1995, Sauer et al. 2003). This decline nationally can be attributed to loss of habitat as well as an increase in mowing grasslands for hay production (Montana Partners in Flight 2000). Although no comprehensive survey exists linking

populations of any of these species to state lands, grasslands on state lands likely provide habitat for some of these bird species.

- **Economic Contributions – Wildlife on state lands** also makes important contributions to the state's local and regional economy. Montana Fish, Wildlife, and Parks regulates harvest of 55 species of wildlife that are hunted or trapped. Recreation opportunities associated with hunting and trapping these game and furbearer species represent a substantial annual economic contribution. In 2001, 229 thousand hunters spent \$238 million in the state while spending 2.4 million days hunting (US Fish and Wildlife Service and US Census Bureau 2003). Revenue from trapping is additive to this value.

Montana's diverse and abundant wildlife populations also attract large numbers of resident and nonresident visitors to wildlife-related activities. In 2001, 687 thousand people spent time in Montana viewing wildlife while spending \$350 million in the state (US Fish and Wildlife Service and US Census Bureau 2003). Viewing wildlife is projected to be the fastest growing wildlife-related activity in the United States (Bowker et al. 1999). The number of persons participating in wildlife viewing is expected to increase by 61% and the number of days devoted to wildlife observation is projected to increase by 97% (Bowker et al. 1999). Revenue from recreation use permits on school trust lands exceed \$400,000 on an annual basis.

- **Regulatory Framework for Wildlife Resources –** In addition to license, easement, and lease requirements imposed by the REMB, a variety of jurisdictional responsibilities pertaining to wildlife resources exist. Additional considerations for wildlife and their habitats are covered by overlapping federal and state authorities. Within the context of the proposed plan, authorities that have potential jurisdiction over activities are, but are not limited to, those that are included herein. Endangered and Threatened species are protected under the Endangered Species Act which is enforced by the US Fish and Wildlife Service. The USFWS is also charged with protecting migratory birds as included in the Migratory Bird Treaty Act. Montana Fish, Wildlife, and Parks oversees much of the remaining wildlife species, including game animals, game birds, waterfowl, fur-bearing animals, as well as most nongame species. On all state lands, including those lands managed under this plan, the state land board is directed to manage the lands under the multiple-use management concept (77-1-203, MCA), which includes considerations for wildlife species and their habitats. Under concurrent consideration within DNRC is the Habitat Conservation Plan being prepared by the Forest Management Bureau. The objective of this plan was described earlier in this Chapter.

3.3.4.2 Wildlife by Land Office

- **Northwestern Land Office –** Dominant vegetation communities are alpine, spruce-fir forest, cedar-hemlock forest, montane seral forest, grasslands,

and riparian communities. The largest habitat type in the northwestern land office is coniferous forest. As such, many of the species relying on forested environments are found within this land office. Some shrubland and grassland habitats also exist within this land office, and those species using some of these habitats are also represented, but to likely a lesser degree than those using the forested environments. Riparian habitats are also present within the land office and, despite the relatively small acreage both at the land office and state levels, play an important role in maintaining those species that use these habitats.

- The northwestern land office manages appreciable amounts of land within the North Continental Divide and Cabinet/Yaak Grizzly Bear Ecosystems. Extensive Canada lynx habitat exists in the higher areas and many pairs of bald eagles nest in the land office area. The land office also contains the Northwestern Montana gray wolf recovery area, where in 2002 at least 62 adult and 43 pups formed at least 11 breeding packs. Yellow-billed cuckoo habitat also exists within the land office area, though no recent observations have been documented. Habitat for most of the big game and carnivore species also exists, along with habitat for many of the small mammals associated with forests, riparian and wetland habitats, and subalpine habitats. Habitat also exists for a forested grouse, turkeys, pheasants, sharp-tailed grouse, several species of raptors and owls, waterfowl, many of the woodpeckers, resident and migratory songbirds, plus several amphibians and reptiles.
- Southwestern Land Office – Within the boundaries of the southwestern land office is a mixture of montane forest, grasslands, and shrub habitats. Grasslands and shrub lands are increasingly more common within this land office. The four unique vegetation communities in this province include coniferous forests, sagebrush steppe, grasslands, and riparian areas. Canada lynx habitat exists within this land office, along with many nesting pairs of bald eagles. Packs of gray wolves are also expanding their ranges within this land office. Portions of this land office also fall within the North Continental Divide and Bitterroot Grizzly Bear Recovery Zones. Habitat for yellow-billed cuckoos occurs along riparian features within this land office area. Habitat for all the big game species, except bison, exists within this land office area. Habitat for many of the carnivores also exists along with habitat for the small mammals associated with forests, riparian and wetland habitats, subalpine habitats, as well as the species that use grassland plains and shrub steppe habitats. Habitat also exists for forested and shrubland grouse, turkeys, several species of raptors and owls, waterfowl, many of the woodpeckers, resident and migratory songbirds, plus several amphibians and reptiles. With a greater representation of open, grassland and shrubland types, increases in those species utilizing these habitats are seen within this land office area.

- Central Land Office – The central land office is similar in vegetation composition to the southwestern land office and contains a mixture of montane forest, grasslands, and shrub habitats. Grasslands, shrub lands, and agricultural uses are increasingly more common within this land office area. The four unique vegetation communities in this province include coniferous forests, sagebrush steppe, grasslands, and riparian area. Also like the southwestern land office, this land office area supports habitat for Canada lynx and gray wolves. Bald eagles are also present, commonly nesting along major drainages within the boundaries of this land office area. Grizzly bear habitat within the Yellowstone Grizzly Bear Recovery Zone exists within this land office area. Habitat for whooping cranes and black-tailed prairie dogs are found within this land office area. Most species of big game and carnivores can be found within this land office area. As indicated earlier, this land office blends western, coniferous forests with eastern plains habitats, and as such you start seeing species reaching the edges of their state ranges within this land office. Many of the forested species covered in the northwestern and southwestern land offices also exists within this land office, with several disappearing as to the east, within the administrative boundaries. Likewise species associated with the open grassland plains and shrub steppe habitats become more numerous with the greater representation of these habitats in the more eastern portions of this land office. The diversity of habitats within the land office caused by the juxtaposition of these major habitat groups probably supports the greatest diversity of animal species, including the broad groups of mammals, birds, amphibians, and reptiles.
- Northeastern Land Office – The grasslands of central and eastern Montana comprise the largest vegetation province in Montana. The major vegetation community type in this area is mixed-grass prairie. Vast areas within this land office area are in grassland, shrubland, and agricultural uses. Meanwhile forested environments are relatively limited in comparison to the other land offices. With the increased representation of open grassland and shrub steppe habitats within this land office, species associated with these habitat types are more common while those associated with forested habitats are less common than in other land office areas. Bald eagles nest within this land office area, mainly along the Missouri River, its tributaries, and around major water bodies. Limited Canada lynx habitat exists within the bounds of this land office at some of the higher elevations. Black-footed ferrets and piping plovers are only found within the boundaries of this land office. Riparian areas within the land office provides habitat for least terns. Habitat for whooping cranes and black-tailed prairie dogs also exists within this land office area. Big game species that are found within the boundaries of this land office include both deer species, elk (within coniferous habitats along major drainages), bighorn sheep, antelope, mountain lions, and in limited numbers along the western edges, moose, black bears, and mountain goats. Several carnivores and small mammals associated with riparian habitats

exist within this land office area, but those species associated with coniferous habitats are largely absent from the land office area except for portions of the westernmost edge of the land office. Forested upland game birds are also largely absent from this land office area, while habitat for shrubland grouse is more widespread. In general, the transition towards increasingly open habitats with less forested types carries over to a myriad of wildlife species, including nongame mammals, resident and migrant songbirds, raptors, and owls. Several reptiles and amphibians (namely lizards and toads) are found in this land office.

- Southern Land Office – The grasslands of central and eastern Montana comprise the largest vegetation province in Montana. Additionally, the Temperate Desert occupies a small area in south-central Montana. The four vegetation community types in this area include coniferous forests, semi-arid grasslands, shrub lands, and riparian communities. Vast areas within this land office are in grassland types with smaller components of shrubland and forests. With the increased representation of open grassland and shrub steppe habitats within this land office area, there are more species that use these open habitats and fewer of the species that rely on the forested habitats of western Montana. Bald eagles nest within the land office boundaries, mainly along the Yellowstone River and around major water bodies. Limited Canada lynx habitat exists at some of the higher elevations. Some grizzly bear and gray wolf habitat exists, mostly within the Yellowstone Ecosystem. Habitat for whooping cranes and black-tailed prairie dogs exists within this land office area. Big game species that are found in this land office area include both deer species, elk (within coniferous habitats along major drainages), bighorn sheep, antelope, mountain lions, black bears, and in limited numbers along the western edge of the land office, moose and mountain goats. Several carnivores associated with riparian habitats exist within this land office area, but habitat for those carnivores associated with coniferous habitats is starting yield to more open types, thereby reducing the presence of these forested species. Likewise, habitat for forested upland game birds are also being replaced by habitat for open grassland types, which is habitat for the shrubland grouse species. In general, the transition towards increasingly open habitats with less forested types carries over to a myriad of wildlife species, including nongame mammals, resident and migrant songbirds, raptors, and owls. Several reptiles and amphibians (namely lizards and toads) are found in this land office.
- Eastern Land Office – The grasslands of eastern Montana comprise the largest vegetation province in Montana. The major vegetation community type in this area is mixed-grass prairie with a component of shrub lands. Vast areas within this land office are in grassland, shrubland, and agricultural uses. Meanwhile forested environments are relatively limited in comparison to the other land offices. Species that use open habitats are more widespread with the increased representation of open grassland and

shrub steppe habitats within this land office, and species that rely on the forested habitats of western Montana are less common. Bald eagles nest within this land office area, mainly along the Yellowstone River, its tributaries, and around major water bodies. Riparian areas within the land office area provides habitat for least terns. Habitat for whooping cranes and black-tailed prairie dogs exists within the land office area. Big game species that are found in this land office area include both deer species, elk (within coniferous habitats along major drainages), bighorn sheep, antelope, and mountain lions. Several carnivores and small mammals associated with riparian habitats exist within this land office area. The swift fox is only found within the eastern land office. Forested upland game birds are also largely absent from this land office, while habitat for shrubland grouse is more widespread. In general, the species that rely upon forested environments are largely limited within this land office while those species using open habitats are more abundant.

3.3.5 Vegetation

3.3.5.1 General Statewide Overview

Vegetation communities of Montana are diverse due to the state's wide variety of climatic and geomorphic influences. Much of western Montana is strongly characterized by forest vegetation and grassland or sagebrush steppe in many intermontane basins. Six distinct ecological forest type groups have been identified for western Montana. These include:

- ponderosa pine forests
- western larch/Douglas fir forests
- western larch/Douglas fir, western white pine, and mixed conifer forests
- lodgepole pine forests
- Douglas fir forests
- spruce, spruce/fir, and western red-cedar/grand fir forests.

Forest types by land office are summarized in Table 3-25.

Table 3-25. Forest Area by Forest Type and Land Office (thousands of acres)

Land Office					
TYPE	NWLO	SWLO	CLO	NELO/ SLO/ELO	TOTAL
	M Acres	M Acres	M Acres	M Acres	M Acres
Douglas-Fir	54.1	63.0	72.8	7.3	197.2
Douglas-Fir/Larch	85.7	23.9	-	-	109.6
Western Hemlock	0.3	-	-	-	0.3
Ponderosa Pine	20.4	34.5	14.6	149.6	219.1
Western White Pine	0.1	-	-	-	0.1
Lodgepole Pine	25.3	15.2	10.9	2.4	53.9
Larch	22.7	2.7	-	-	25.4
Western Red Cedar	3.8	0.1	-	-	3.9
Limber Pine	-	-	1.2	0.2	1.4
Grand Fir	9.8	0.1	-	-	9.9
Spruce/Subalpine Fir	21.2	1.0	6.6	0.0	28.8
Spruce	22.8	1.4	0.1	-	24.2
Whitebark Pine	0.2	-	1.0	0.0	1.3
Mixed Conifer	11.8	0.7	0.7	0.5	13.7
Non-Commercial	2.8	0.8	0.4	0.2	4.2
Nonstocked	6.1	10.1	5.6	2.4	24.2
Other Hardwoods	0.3	0.0	0.0	0.1	0.5
Aspen	0.2	0.4	2.5	1.6	4.6
Cottonwood	0.7	0.8	0.4	2.8	4.7
	228.2	154.6	116.9	167.1	726.8
TOTALS					

Estimates based on DNRC Stand Inventory, 2003.

In contrast, much of eastern Montana is characterized by open grasslands. These grasslands include mixed-grass prairie dominated by wheatgrasses, needlegrasses, and grama species intermixed with a variety of forbs and pricklypear cactus and varying densities of sagebrush. They also include foothills-prairie ecological groups where grasses such as bluebunch and needle-and-thread are the dominate grasses and sagebrush is a common component. Not all of eastern Montana is open prairie, however, and in areas such as the Missouri and Powder River breaks, and the Wolf Mountains, eastern ponderosa pine forests are prevalent. More specific descriptions of vegetation types common to lands administered by the individual Land Offices are presented below. Issues regarding noxious weed occurrences follow. .

3.3.5.2 Regional Overview

- Northwestern Land Office – Land administered by the Northwestern Land Office lies within Montana's Northern Rocky Mountain province. The most pronounced vegetative feature of this province is the distinct zones that form along altitudinal gradients. Dominant vegetation communities are alpine, spruce-fir forest, cedar-hemlock forest, montane seral forest, grasslands, and riparian communities.

Trees are largely absent in alpine communities. Vegetation communities occupy diverse environments such as exposed ridges, boulder fields, fell fields, broad moist basins, bogs, fens meadows, lower shrub communities and krumholz islands of conifer species.

The spruce-fir forest community is dense-to-open with a well-developed shrub and herbaceous layer (Kuchler 1964). Subalpine fir is characteristically dominant and found most frequently at higher elevations where it is more likely to establish in shade and in organic soils. (Peet 1993) White spruce, a taller and longer-lived species, is more tolerant of extreme conditions.

Cedar-hemlock forest communities contain tall, dense stands of fast-growing, shade-tolerant species (Kuchler 1964). Western hemlock clearly dominates the seedling and sapling strata of seral forests. Western redcedar may be more successful in drier areas (Peet 1993).

Three species, Douglas-fir, lodgepole pine and ponderosa pine form the mixed conifer community that are frequently found in areas cleared by large-scale disturbance such as fire, insects, disease, and mass wasting. Douglas-fir, lodgepole pine, or ponderosa pine may temporarily dominate seral stands depending upon local climate and geomorphic features. Other common species in these communities include western larch, grand fir, and western white pine.

Two distinct grassland habitats occur in Northwestern Montana. At higher elevations, meadow and grassland communities occur in both excessively wet and excessively dry environments. Grasslands also occupy low elevation valley bottoms of northwestern Montana (Kuchler 1964).

Riparian forest communities occur adjacent to rivers and streams. Despite disturbance from flooding, changes in stream channels, and sedimentation, relatively stable plant communities often form. Dominant tree species include black cottonwood and paper birch.

- Southwestern Land Office – The Southwestern Land Office contains a mixture of montane forest, grasslands, and shrub habitats typical of the Middle Rocky Mountain province. Four unique vegetation communities occur in this province. They are coniferous forests, sagebrush steppe, grasslands, and riparian. The alpine community is less extensive than in northwestern Montana though it is not appreciably different where it occurs. Spruce-fir forest communities in the Southwestern Land Office are similar to the spruce-fir forests occurring in the Northwestern Land Office. Grand fir communities replace cedar-hemlock forests south of Glacier National Park though grand fir does not occur at the south end of this region. Grand fir is found on valley bottoms, benches, and slopes between 2,400 and 5,000 feet elevation. Associated coniferous species include Douglas-fir, lodgepole pine, western white pine, ponderosa pine, Pacific yew, and western larch. Douglas-fir dominates many seral forest communities. Douglas-fir occurs at somewhat higher elevations than in the Northwestern Land Office and is frequently associated with grasses. It occurs on well-drained mountain slopes and in valleys between 2,500 and 7,500 feet elevation. Lodgepole pine is an early seral species in clear-cut, or recently burned areas, especially those that develop into Douglas-fir or spruce-fir forests. It is usually the first conifer to grow except in the driest areas (Arno *et al.* 1985). Without disturbance, lodgepole pine does not regenerate, and is replaced by more shade tolerant and longer-lived species. In well-drained areas where repeated fires may eliminate other conifer seed sources, lodgepole pine can appear as a climax.

- Ponderosa pine forest communities endure in dry areas at a slightly higher elevation than grasslands. It is a climax species in areas with a regular low-intensity fire regime.

The Shrub steppe community occupies large areas in southwestern Montana and consists of a mosaic of shrub lands and grasslands. In some cases, it covers mountain slopes where conditions are unsuitable for forests. The most common communities contain sagebrush species such as big sage, black sage, and birdfoot sagebrush.

Human activities are most apparent in the shrub steppe community. Land has been converted from grasslands and shrub lands into agricultural or range lands. In many areas, dry forest types have encroached into the shrub steppe. Grazing has facilitated the encroachment of woody species into dry grasslands as well as increased the density of shrubs by removing associated palatable native species. Domestic grazing on native rangeland has replaced many native grasses with exotic pasture grasses. Development has increased fragmentation of some native communities. In addition, grazing has replaced native grasses with pasture grasses and caused woody species to encroach into previously open areas. Noxious weeds are common.

Riparian forest communities are widespread and adjacent to major rivers and streams at elevations below 6,000 feet. Black cottonwood is the dominant tree species. Other deciduous trees include cascade mountain ash, hawthorne, plum, and Rocky Mountain maple. Associated shrub species include willow, wolfberry, ground dogwood, and Wood's rose (Pfister et al. 1977).

- Central Land Office – The Central Land Office contains a mixture of montane forest, grasslands, and shrub habitats typical of the Middle Rocky Mountain and Yellowstone Plateau Vegetation Provinces. In the southern areas, soil moisture is inadequate to support forests and therefore grasslands and shrub lands predominate (McNab and Avers 1994). Four unique vegetation communities occur in this province. They are coniferous forests, sagebrush steppe, grasslands, and riparian. The alpine community is less extensive than in northwestern Montana and is not significantly different.

Spruce-fir forest communities in the Central Land Offices are similar to the Spruce-fir forests occurring in the Southwestern and Northwestern land offices. Other coniferous species include Douglas-fir, lodgepole pine, ponderosa pine, limber pine, and rocky mountain juniper.

Douglas-fir dominates many seral forest communities and is frequently associated with grassland/forest savannah. It occurs primarily on well-drained mountain slopes and along valley edges between 3,000 and 7,500 feet elevation.

Ponderosa pine forest communities endure in dry areas along foothills grassland fringes. It can function as a climax species in areas with a regular low-intensity fire regime.

Limber pine forests extend east from the Continental Divide into the foothills grassland and occupy some of the driest areas capable of supporting trees. They are also found on low-to-mid elevation dry, steep slopes.

At higher elevations, lodgepole pine is an early seral species in clear-cut, or recently burned areas, especially those that develop into Douglas-fir or spruce-fir forests. It is usually the first conifer to grow except in the driest areas (Arno *et al.* 1985). Without disturbance, lodgepole pine does not regenerate, and is replaced by more shade tolerant and longer-lived species. In well-drained areas where repeated fires may eliminate other conifer seed sources, lodgepole pine can appear as a climax.

In many areas, land has been converted from grasslands into agricultural crop or pasture and dry forest types (Douglas-fir, ponderosa pine, and limber pine) have encroached into the foothill and valley grassland communities. Grazing has facilitated the encroachment of woody species into dry grasslands as well as increased the density of shrubs by removing associate palatable native species. Domestic grazing on native rangeland has also replaced many native grasses with exotic pasture grasses. Development has increased fragmentation intact native communities. Occurrences of noxious weeds are common in disturbed plant communities.

- Northeastern, Eastern and Southern Land Offices – The grasslands of central and eastern Montana comprise the largest vegetation province in Montana, extending from the Continental Divide in the west to the Poplar River in eastern Montana (Figure 3-X). The Temperate Desert province occupies a small area in south-central Montana and is occupied by unique vegetation communities similar to desert areas of Wyoming and Colorado. Three vegetation community types are found in this area. They include coniferous forests, mixed-grass prairie, and riparian communities. Alpine vegetation does not occur in this region.

Spruce-fir forests occur above 8,000 feet in the Pryor Mountains. Forests consisting of subalpine fir and Engelmann spruce occur only at the highest elevations throughout this province. Lodgepole pine is present on cool, moist, steep slopes and plateaus. These forests prevail in areas with a

regular fire disturbance cycle. They may form large forests or appear as islands within other forests (Despain 1973). They typically occur on gentle slopes with well-drained soils.

Douglas-fir is found on warmer, drier sites at lower elevations. Additional tree species present in this forest type include lodgepole pine, ponderosa pine, and occasionally whitebark pine. All of these species are adapted to a regular fire regime and regenerate well following disturbance.

The eastern population of ponderosa pine is genetically distinct from that occurring on the west side of the Rocky Mountains (Kuchler 1964; Peet 1993). These forests occur on coarse stratified outcroppings of sandstone, scoria, or on rocky soils (Despain 1973). These forests are dry enough to burn regularly, and many old trees are resistant to frequent low intensity fires (Daubenmire 1943).

Juniper woodlands are found on relatively dry sites on sedimentary soils and breaks in central and south-central Montana. These woodlands have expanded in many areas in connection with grazing and in altered fire regimes (ABI 2001).

Shrub steppe communities occupy low hills and outwash plains of the Pryor Mountains. The terrain consists of gentle to moderately steep slopes, terraces, alluvial fans, outwash plains, toeslopes, drainages, wide alluvial valleys, highly eroded terrain, and badlands. Soil texture is predominantly silt and clay with surface gravels. Shrub cover is moderate, usually one to three feet tall, with a sparse understory of forbs and grasses.

Grassland communities occur in areas where environmental conditions are unsuitable for tree or shrub species. Windswept mesas, ridgetops, upper slopes, outwash plains, and foothills are typically dominated by grass species. These open grasslands are dense and contain scattered low-growing shrubs (Kuchler 1964).

In central and eastern Montana, thickets of boxelder, American ash, scrub oak, Russian olive, and plains cottonwood occur along streams, rivers, lakes, springs, and ponds. They occupy floodplains, terraces, fans, and woody draws.

The mixed-grass prairie is Montana's largest community type, covering central and eastern Montana, excluding the island mountain ranges of the Northeastern Land Office. Steep slopes bordering rivers create isolated badlands that occasionally interrupt the relatively flat, undulating plains. Elevations range from 2,000 to 4,000 feet. These hilly plains have little relief, often less than 200 feet. These short and open grasslands are often sparsely vegetated.

In extreme eastern Montana, the vegetation is influenced by increased precipitation, resulting in grasslands that are taller and more productive than those further west. This grassland represents an ecotone between the dry grasslands in the interior of Montana and the tall grass prairie region of the central United States.

Harsh environmental conditions limit the abundance and diversity of plants in this vegetation province. Poor soil drainage creates temporarily saturated surface horizons that dry completely between summer thunderstorms. This area contains a number of relatively unpalatable shrubs and is not browsed intensively by cattle. Exotic plants have invaded many stands especially where disturbed.

3.3.5.3 Noxious Weeds

Noxious weeds of Montana are listed at

<http://agr.state.mt.us/programs/asd/noxweeds.shtml>. These species are aggressive and invasive plants able to withstand extreme environmental conditions and are often associated with negative ecological and economical impacts. Disturbed areas are most likely to be invaded by noxious weeds. Soil disturbance by vehicles, machinery, and heavy grazing creates ideal sites for weed seed germination; hence weed infestations are most pervasive in areas with numerous roads and/or trails. Noxious weeds can create widespread economic and environmental losses by displacing native species, decreasing wildlife habitat, reducing forage production, reducing recreational land value, reducing biodiversity, eliminating threatened and endangered plant species, altering normal ecological processes, and increasing stream sedimentation (Malone 2000).

Noxious weeds as designated by the State of Montana, are divided into four categories. Category one noxious weeds are exotic species, which are firmly established and widely spread throughout Montana. A well-known category one noxious weed is spotted knapweed, which first appeared in Missoula County in 1920. In the subsequent years, spotted knapweed has spread to all Montana Counties. Category two weeds are new invaders with limited distribution and density, which, if detected early enough, often makes eradication feasible. Category three includes those species known to occur in adjacent states and with potential for subsequent introduction. An example of a category three noxious weed is yellow starthistle, which is spreading across Washington and Idaho at about 25,000 acres per year, and thereby threatening much of southwestern Montana. Category three weeds have either not been detected in the state or may be found only in small, scattered, localized infestations. Watch weeds are known pests in nearby states and may be capable of rapid spread. The Montana Noxious Weed Advisory Council Additional will collect and review additional information on these species.

Category one weeds occupy approximately 8 million acres in Montana and are considered the single most serious threat to natural habitats. The Trust Land Division manages approximately 5.2 million acres in six areas and twelve unit offices. The total number of these acres infested by weeds is unknown, however based on a statewide infestation rate of 9 percent; it is projected that 450,000 acres are currently infested (Lacey 1987). Weeds with highest coverage in the state are spotted knapweed (3.8

million), Canada thistle (1.5 million), and leafy spurge (1 million). The estimated economic losses by leafy spurge and spotted knapweed to grazing lands and wildlands in the upper Great Plain is estimated at 130 million, and 42 million, respectively (Duncan 2001). DNRC requires all lessees to control any noxious weeds introduced by the lessee, or his activities, on Trust Lands in compliance with the Montana County Noxious Weed Management Act.

3.3.5.4 Plant Species of Special Concern

The Montana Natural Heritage Program (MNHP) maintains an inventory of animal species, plant species, plant communities, and biological features that are rare, endemic, disjunct, threatened, or endangered throughout their range or in Montana; vulnerable to extirpation in Montana; or in need of further research. The USFWS maintains a list of threatened and endangered species, candidates for listing, and those proposed for listing. Federally listed threatened and endangered species have legal standing and must be addressed in proposed projects on federal lands. They also may impact proposed actions on state lands and private property. State listed species of special concern have no legal standing; however, it is suggested that efforts to identify and protect these species be undertaken, or that state agencies that have regulatory authority over programs that may impact these species include procedures to identify and protect them.

Appendix E contains names, and habitats of 85 rare plant species found on State Trust Lands. No endangered plant species occur in Montana, although two threatened species occur in Montana and on Trust Lands. Water howellii occurs in ponds and standing water of the Swan Valley within the Northwest Land Office. Ute ladies tresses are found in wet meadows, meandering swales of broad open valleys within the Southwest and Central Land Offices. One proposed threatened species, Spaulding's catchfly is not known to currently occur on State Trust Lands though appropriate habitat occurs within the Northwest Land Office. Each land office contains rare species unique to that region and a few species that occupy more than one region.

3.3.6 Air Quality

3.3.6.1 Introduction

This section describes the general air quality present throughout the State of Montana. The Montana Department of Environmental Quality (DEQ) has completed detailed reviews of air quality in the 19 non-attainment areas, as well as the rest of the state. Information presented in this section was derived from MT DEQ publications, as well as data gathered by the U.S. Environmental Protection Agency (EPA).

Air quality metrics fall into two categories, primary standards and secondary standards. Primary standards are designed to protect human health, including "sensitive" populations, such as people with asthma and emphysema, children, and senior citizens. Primary standards were designed for the immediate protection of public health, with an adequate margin of safety, regardless of cost. Secondary standards are designed to protect public welfare, including soils, water, crops, vegetation, buildings, property, animals, wildlife, weather, visibility, and other economic, aesthetic, and ecological values, as well as personal comfort and well-being. Secondary standards were established to protect the public from known or anticipated effects of air pollution. Montana has

adopted additional state air quality standards. These Montana Ambient Air Quality Standards (MAAQS) establish statewide targets for acceptable amounts of ambient air pollutants to protect human health.

Criteria air pollutants were selected by EPA based on extensive scientific research showing the direct relationship between exposure to pollutants and their short- and long-term effects on human health and the environment. Federal and State standards have been set for criteria pollutants, which include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂, often indicated by the more general NO_x), sulfur Dioxide (SO₂), ozone (O₃), volatile organic compounds (VOC), particulate matter (PM₁₀ and PM_{2.5}), and visibility.

3.3.6.2 General Statewide Overview

Clean air is a basic natural resource essential for all living things. Air is also the transport pathway, via dry and wet deposition, through which emitted chemicals reach the biosphere and interact with natural ecosystems. For example, nitrogen species emitted by diverse sources such as automobiles and power plants is blown downwind and settles to the ground or is washed from the air by rain, effectively fertilizing remote regions and potentially altering the natural balance between species. Nitrogen and sulfur also combine with water in the atmosphere to form acids, which after falling to earth as "acid rain" tend to degrade the quality of forests, lakes and streams.

Clear air is a natural resource that various industries, including tourism, depend on. Visibility in National Parks and Monument and in State Forests is critical to their continued use by tourists and State residents alike. PM₁₀, particulate matter less than 10 microns in diameter, is a regulated pollutant that directly affects visibility. PM₁₀ and PM_{2.5} (diameters less than 2.5 microns) also affect basic health, as they are more easily ingested via the lungs. Nitrogen and sulfur compounds combine in the atmosphere with naturally occurring ammonia to form PM₁₀, in addition to their other more direct effects described above.

Since the 1960's, both State and Federal laws have been passed to protect air quality. Additionally, Montana allows any city or County to establish its own local air pollution control program. Seven counties currently operate local air pollution control programs that encompass the following communities: Billings, Butte, Great Falls, Helena, the northern Flathead Valley, Libby, and Missoula. These local air pollution control programs have jurisdiction over most pollution sources within their boundaries.

In general, the air quality in most of Montana is good due to the state's relatively low population density. There are however several areas in the State where Federal and/or State standards for criteria pollutants are not currently met. These areas are designated as "non-attainment areas", since they do not attain air quality standards. Non-attainment areas can be either Federal non-attainment areas or State non-attainment areas, depending on whether the observed concentrations exceed the Federal or State standards. The EPA requires the States to develop State Implementation Plans (SIP) for any non-attainment areas, specifying what will be done to improve the air quality. After

the measured concentrations have fallen back below the standard, the non-attainment area is re-designated a "maintenance area."

As specified by the 1977 amendment to the 1963 Clean Air Act, Prevention of Significant Deterioration (PSD) area classification requirements let states plan for local land use. Each PSD classification differs in the amount of development it will allow. Acceptable growth is estimated using computerized air dispersion modeling techniques to gauge the effects of current and potential pollution sources on surrounding areas. PSD regulations allow for three area classifications:

- Class I areas allow the smallest incremental growth and accommodate only a small degree of air quality deterioration
- Class II areas can accommodate normal, well-managed industrial growth
- Class III areas allow the largest increments of growth and provide for a larger amount of development than either Class I or Class II areas.

There are several Class I areas in the Montana. These are generally Tribal or Federal lands such as reservations, National Forests, National Monuments or Wilderness Areas, and are protected under the 1963 Clean Air Act. Important issues for Class I areas include deposition of sulfur and nitrogen species, as well as visibility impairment by PM_{10} .

The climate of Montana is as varied as the topography. Winter can be bitterly cold; although temperatures in January range from 11 to 35 °F (-11 to -2 °C), most places experience at least a week below 0 °F (-17 °C). The warmest temperatures are in July, when the statewide range is 64-88 °F (17-31 °C), though most places will record 90 °F (32 °C) a few times each summer. On summer nights, temperatures are typically 50-60 °F (10-15 °C). The parts of the state west of the Continental Divide are generally cooler than the southeast. Average annual precipitation is 15 inches, varying from 9.69 in the eastern plain to more than 100 inches in the rainiest parts of the mountainous west. Summers are typically dry, and winters across the State features snow. May-July is the rainiest part of the year.

3.3.6.3 Regional Overview

- Northwestern Land Office – Regions in and around Columbia Falls, Thompson Falls, Whitefish, Libby and Kalispell are all State PM_{10} non-attainment regions. Additionally, regions in and around Polson and Ronan are Federal PM_{10} non-attainment areas. Kalispell is also a State carbon monoxide non-attainment area.

There are four Federal Class I areas in the Northwestern Land Office region: Cabinet Mountains Wilderness and Mission Mountains Wilderness, and parts of Glacier National Park, and Bob Marshall Wilderness. Additionally, the Flathead Reservation has been declared a Class I area.

The Northwestern Land Office region contains two major existing sources of air pollution. The Columbia Falls Aluminum plant in Flathead County is a major source of carbon monoxide, PM₁₀, and sulfur dioxide. Stimson Lumber in Libby, Lincoln County, is a major source of carbon monoxide.

- Southwestern Land Office – Regions in and around Missoula and Butte are State PM10 non-attainment regions. Missoula is also a State carbon monoxide non-attainment area.

The Southwestern Land Office region contains several Class I areas: Selway-Bitterroot Wilderness, Anaconda-Pintlar Wilderness, Scapegoat Wilderness, and parts of Bob Marshall Wilderness.

The Stone Container paperboard mill in Missoula (Missoula County) is a source of carbon monoxide and volatile organic compounds.

- Central Land Office – The region in and around Great Falls was a State carbon monoxide non-attainment area, and is currently a maintenance area. East Helena is a State lead non-attainment area and a State sulfur dioxide non-attainment area.

The CLO contains several Class I areas: Parts of Glacier National Park, and Bob Marshall Wilderness, as well as Gates of the Mountains Wilderness, Red Rock Lakes Wilderness, and Yellowstone National Park.

The Asarco smelter in East Helena (Lewis and Clark County) was the State's largest source of airborne sulfur dioxide. Plant operations were temporarily suspended in April 2001, but the plant may start up again. Montana Refining, a petroleum refinery in Great Falls in Cascade County, is a source of sulfur dioxide.

- Northeastern, Eastern and Southern Land Offices – The region in and around Lame Deer in the Southern Land Office is a Federal PM10 non-attainment area. Billings was a State carbon monoxide non-attainment area, and is currently a maintenance area. Billings and Laurel are also State sulfur dioxide non-attainment areas.

The Northeastern Land Office region contains the UL Bend Wilderness Class I area, as well as Medicine Lake Wilderness Class I area. Additionally, the Northern Cheyenne Reservation in the Eastern Land Office and the Fort Peck Reservation in the Northeastern Land Office have been classified as a Class I area.

The Eastern Land Office region contains several existing point sources of air pollution. In Richland County, MDU operates the Lewis & Clark station, a source of sulfur dioxide and a moderate source of nitrogen

dioxide. In Rosebud County, there are four existing point sources. Western Energy's Rosebud mine is a source of PM₁₀. Colstrip Energy operates their Rosebud plant, a source of sulfur dioxide. Two plants in Colstrip are sources of carbon monoxide, nitrogen dioxide (the State's largest), and sulfur dioxide.

In Yellowstone County in the Southern Land Office region, there are four existing point sources. Conoco, Cenex and Exxon each have refineries that are sources of sulfur dioxide and volatile organic compounds. Montana Sulfur & Chemical operates a plant in Billings that is a source of sulfur dioxide.

3.4 DESCRIPTION OF RELEVANT RESOURCES RELATED TO THE CULTURAL AESTHETIC AND SOCIAL ENVIRONMENT

3.4.1 Noise

3.4.1.1 Introduction

Noise is typically defined as "unwanted sound". The noise levels heard by a human or an animal are dependent on several variables including distance between the source and receiver, altitude, temperature, humidity, wind speed, terrain, and vegetation. In the context of protecting the public health and welfare, noise can have adverse effects on people and the environment. For discussion purposes, noise effects are disclosed and compared on a rural versus urban basis in this section. Although Montana is predominantly rural, urban noise environments in larger cities and towns exist in each of the six land office areas across the state.

Human and animal perception of noise is affected by intensity, pitch, and duration, as well as the auditory system and physiology of the animal. Noise levels are measured in decibels (dB). On this scale, human perception of sound is linear. The sound spectrum (the plot of amplitude vs. frequency) of a sound must be weighted by the auditory function of an animal to characterize its audibility (Bowles 1995). The U.S. Environmental Protection Agency (EPA) recommends the A-weighted scale (dBA) to describe environmental noise because it emphasizes frequencies that humans hear best (typically between 1,000 and 6,000 Hertz (cycles per second)), is accurate, convenient, and used internationally (EPA 1979). [Terry: Use the MBOCG discussion/definition of day-night noise (Ldn) level.] EPA has extended this method to describe the average sound in a 24-hour period. The Loudness-Day-Night (Ldn) method incorporates a 10-dBA-quietness correction for sound levels between 10:00 pm and 7:00 am. The nighttime dBA adjustment accounts for quieter time background noise levels and human expectations regarding interference with sleep (BOGC 1989). Based on this correction, nighttime noise should be half as loud as daytime noise.

As a result of the Noise Control Act of 1972, EPA developed acceptable noise levels under various conditions that would protect public health and welfare with an adequate

margin of safety. EPA's "Levels Document" indicates that outdoor day-night noise levels less than or equal to 55 dBA are sufficient to protect public health and welfare in residential areas and other places where quiet is a basis for use (EPA 1979). The EPA guidelines are not enforceable regulations, and where applicable, local city or county ordinances may use different noise level criteria.

3.4.1.2 State Wide Overview

Noise levels on Montana's Trust Land tracts are variable. Because of the variety of changes in the acoustical environment, it is not possible to describe noise levels associated with a particular source. Tracts located in or near wilderness areas experience day-night noise levels as low as 30 to 40 dBA (EPA 1979). Noise contributors in the forest or wilderness setting typically include wind, wildlife, flowing water, overhead aircraft, and the occasional human visitor.

Montana's rural residents and occasional visitors commonly experience background (ambient) noise generated by wind, agricultural activity, recreation (primarily hunting), and vehicles traveling on nearby roads and highways. General noise level data from the EPA and the National Transit Institute were used to provide a typical sound level range for rural residential and agricultural cropland areas. Typical baseline noise levels on Trust Land tracts located in the rural, agricultural setting range from approximately 38-dBA to 48-dBA day-night with average noise levels seldom exceeding 50 dBA (EPA 1979).

Primary contributors to background noise in Montana's larger towns and cities are urban traffic, freeway traffic, manufacturing facilities, and aircraft. Day-night noise levels on Trust Land tracts located in these urban/suburban settings typically average between 50 dBA and 80 dBA with some situations resulting in even higher average noise levels (e.g., near airports or freeways; EPA 1979).

3.4.1.3 Land Offices

Ambient noise conditions in Montana are not distinguishable between the six DNRC land offices (Northwestern, Central, Southwestern, Northeastern, Eastern, and Southern land offices). Various levels of ambient noise are present in each of the land office areas and include natural and man-made sources as described in the *Statewide Overview* section above.

3.4.2 Aesthetics

3.4.2.1 Introduction

Aesthetics and visual quality are an important part of the landscape. Although assessing scenic values is generally subjective, scenic quality is typically determined by evaluating the overall character and diversity of landform, vegetation, color, water, and manmade features in a landscape. Typically, more complex or diverse natural landscapes have higher scenic quality than those landscapes with less complex landscape features. Visual impacts of man's activities are commonly assessed on the basis of contrast (e.g., form, line, color, and texture) to the surrounding landscape.

3.4.2.2 State-Wide Overview

As described in the *Geology and Soil* section, Montana's diverse topography is dominated by the Rocky Mountains in the western one-third of the state, and the Great Plains and badlands in the eastern two-thirds of the state. As a result, Montana's Trust Land tracts, including those under lease by the REMB, are located in dramatically different landscapes that present widely varying aesthetics to the viewer. The ensuing discussion of aesthetics is organized by land offices with similar topographical areas.

3.4.2.3 Regional Overview

- Northwestern Land Office – Land administered by the Northwestern Land Office lies within Montana's Northern Rocky Mountain province. Much of this region is classified as open mountains, a distinctive setting with high, detached mountain ranges separated by broad, smooth-floored valleys. The primary valley in this region is the Flathead Valley. The mountains in this region are composed of Montana's Columbia Rockies, classic mountain landscapes of individual ranges closely spaced with narrow and restricted valleys. The Cabinet Mountains, Purcell Mountains, Whitefish, Flathead, and Swan ranges are some of the landmark highlands within Montana's rugged Northern Rockies. The state's lowest elevation of 1,800 feet above sea level occurs within this region where the Kootenai River flows into Idaho.

Elevations range from approximately 2,000 feet to over 10,000 feet above sea level, and different aspects, result in varying climates, and environments. Trust Land tracts are interspersed amongst viewsheds that range from high alpine wilderness landscapes to that dominated by urban development in the valley bottoms.

Manmade features are readily observable on many of the surrounding mountains. These include roads and clearcuts resulting from logging operations, areas of historic mining activity, transmission lines and other utility corridors, scattered rural residences, and the effects of grazing. Landforms in the Northwestern Land Office area is characterized by the following:

- Mixed, relatively dense conifer forests are found on north-facing slopes and floodplain terraces along most rivers.
- South-facing floodplain terraces, benches, and slopes are characterized by open forests dominated by ponderosa pine with Douglas fir comprising up to one-third of the trees. Trees dominate the vegetation.
- Major river systems occupying broad valleys are dominant landscape features throughout western Montana. Unique landforms associated

with the Clark Fork, Flathead, Swan, and other rivers include floodplains, river terraces, bench lands, and water-cut cliffs.

- In addition to river systems, sizeable lakes are landscape features of western Montana. These include Flathead, Swan, Whitefish, and numerous smaller lakes.
- Urban and suburban areas occupy large portions of Montana's western valleys. The primary center of commerce and urban growth in this region is Kalispell. Outlying, smaller communities dot the landscape within the Flathead Valley. Residences, roads and highways, businesses, industries, and community centers such as schools and churches dominate these urban landscapes. The structures and colors of manmade features are dominant and deciduous trees and conifers lining city streets, residences, businesses, and parks add to the urban landscape.
- Southwestern Land Office – Similar to the Northwestern Land Office, the Southwestern Land Office also lies within Montana's Northern Rocky Mountain province. The landscape is dominated by detached mountain ranges separated by numerous broad valleys. Primary valleys in this region include the Clark Fork, Bitterroot, Flint Creek, and Deer Lodge. The mountains in this region include the Bitterroot Range, Flint Creek Range, Sapphire Mountains, and Garnet Range.

Manmade features are readily observable on many of the surrounding mountains. Roads and clearcuts resulting from logging operations, areas of historic mining activity, transmission lines, utility corridors, scattered rural residences, and agricultural practices affect the visual characteristics in the region. Landforms in the Southwestern Land Office area is characterized by the following:

- Mixed, relatively dense conifer forests are found on north-facing slopes and floodplain terraces along most rivers.
- South-facing floodplain terraces, benches, and slopes are characterized by open forests dominated by ponderosa pine with Douglas fir comprising up to one-third of the trees. Trees dominate the vegetation.
- Major river systems occupying broad valleys are dominant landscape features in the Southwestern Land Office area. Unique landforms associated with the Clark Fork, Bitterroot, and other rivers include floodplains, river terraces, and bench lands.
- Urban and suburban areas occupy large portions of the valleys. The primary center of commerce and urban growth in this region is

Missoula. Outlying, smaller communities dot the landscape within the various valleys. Residences, roads and highways, businesses, industries, and community centers dominate these urban landscapes. The structures and colors of manmade features are dominant and deciduous trees and conifers lining city streets, residences, businesses, and parks add to the urban landscape.

- Central Land Office – Land administered by the Central Land Office is considered Montana's Rocky Mountain Front extending from the Canadian border south to Idaho and Wyoming. The Front is comprised of several individual mountain ranges, foothills, and adjacent prairie that forms the westernmost extension of the Great Plains. Landscape character types, and associated structure and color features within the area administered by the Central Land Office include:
 - The ragged peaks of the Sawtooth Range, the overthrust belt that forms the western skyline of Montana's northern Rocky Mountain Front. Limestone outcrops several thousand feet in height rise abruptly from prairie grasslands along many stretches of the front. Along others, the disturbed belt, heavily eroded hills and buttes formed from volcanic rock and thrust folds, buffer the front from the prairie. Barren sedimentary and volcanic rock outcrops, prairie grassland, scattered conifer forests, and scattered aspen groves and shrubs provide the landscape colors of the front.
 - Several isolated mountain ranges lie to the east of the Rocky Mountain Front within the area administered by the Central Land Office. These ranges dissect the surrounding plains, and are composed of mountains, hills, slopes, terraces, and fans. Coniferous forests of these ranges provide the dominant colors with shrubs, grasses, and deciduous trees providing seasonal variations.
 - The Missouri River and its tributaries dissect foothills, benchlands, and prairie located within the Central Land Office area. These drainages provide corridors of riparian vegetation within a generally dry landscape. Deciduous trees, shrubs, and grasses provide a seasonal color contrast in comparison to the surrounding foothill or prairie landscape.
 - Cities within the Central Land Office area that typify urban growth in Montana include Great Falls, Helena, and Butte. Great Falls is set against the backdrop of the Great Plains to the east, the prominent presence of the Missouri River, and the Rocky Mountain Front visible on the Western horizon. Helena, located in a broad, open valley, is surrounded by low-rising foothills and mountain ranges, with three large reservoirs of the Missouri nearby. Butte is also located in an open

valley that exhibits landscape features associated with historic mining activity in almost every direction.

- Northeastern, Southern and Eastern Land Offices – The Great Plains, punctuated by isolated “island” mountain ranges dominate the eastern two-thirds of Montana. Major drainages including those of the Missouri, Milk, Yellowstone, and Powder rivers dissect the prairie. Prairie pothole wetlands, remnants of the last glacial episode in Montana, are numerous north of the Missouri River to the Canadian border in the northeastern portion of the state. Erosional forces of wind and water have created badlands that characterize the landscape of the southeastern portion of the state.

Throughout the eastern two-thirds of Montana, cultivated fields, occupied and abandoned farmsteads, rail lines, highways, county roads, and existing transmission lines are prevalent manmade landscape features. Landscape character types, and associated structure and color features include:

- Isolated mountain ranges that dissect the surrounding plains, and are composed of hills, slopes, terraces, and fans. Coniferous forests of these ranges provide the dominant colors with shrubs, grasses, and deciduous trees providing seasonal variations.
- Lowlands along major drainages, tributary drainages, and prairie potholes that include riparian, wetland, native grassland, and cultivated areas. Various shades of green dominate the colors provided to the viewer of these lowlands during the spring and summer. Fall colors provided by deciduous plants are typical, and fade to brown during the late fall through the winter months.
- Upland areas where vegetation diversity is limited to dryland farming and pasture. Colors vary seasonally from green to brown crops and pasture during summer and fall, brown and black associated with fallow farm fields year round, and white and brown associated with late fall and winter periods.
- Areas within lowlands or uplands that have been modified by manmade features (homes, barns, silos). Colors in and around the predominantly rural residences and communities in eastern Montana are typically dominated by surrounding agricultural land, shelterbelts, and the structures themselves.
- Badlands composed of flat-topped buttes, sandstone pillars, gullies and rills, steep erosional slopes, and dramatic “fairyland” shapes. The badlands are sparsely vegetated with scattered pines, junipers, sage, and grasses although drainages may occasionally host riparian areas. Colors

of the badlands are most commonly dominated by the pastels of the exposed sedimentary rocks.

3.4.3 Cultural Resources

3.4.3.1 Introduction

Cultural resources are generally recognized as tangible products of human behavior that are more than 50 years old. They include archaeological sites, historic sites, architectural properties, districts, Traditional Cultural Properties, and man-made/man-caused landscapes, structures, objects or features. *Paleontologic resources* are fossilized plant and animal remains which are rare and critical to scientific research. The value of non-renewable cultural and paleontologic resources lies in their ability to provide credible and meaningful kinds of information about past animal and human populations and the environments within which they existed. Discovery and evaluation of these resources before they are impacted by ground disturbing activities, or removed from state ownership, is required by law.

3.4.3.2 Regulatory and Guidance Framework

Legislation that mandates state management of cultural and paleontologic resources consist of the Montana State Antiquities Act (22-3-4 M.C.A.), The Montana Human Skeletal Remains and Burial Site protection Act (22-3-802 et. seq. M.C.A.), and relevant portions of the Montana Environmental Policy Act (75-1-103-2e M.C.A.). The procedures that REMB follows to implement the mandates of the Montana State Antiquities Act can be found at A.R.M. 36-2-801 et. seq.

In order to establish a basic historical context within which cultural resources are organized, the culture history model found at Brumley and Rennie (1993) will be referenced. After a cultural resource and its historical context is identified, that resource will be evaluated to determine if it is a Heritage Property-- a property determined potentially eligible for listing in the National Register of Historic Places (NRHP). The NRHP is the official list of the Nation's cultural resources worthy of preservation. Evaluating a cultural resource's NRHP listing eligibility is accomplished by following the procedures outlined in National Register Bulletin #15. General

3.4.3.3 Statewide Overview

The synthesis of data derived from more than three decades of systematic cultural and paleontologic inventory in Montana suggests that cultural resources, and to a lesser extent paleontologic resources, can be expected to occur across the landscape with varying densities. However, some landforms and environments have a higher potential than others for containing these resources. As will be outlined in the following subsections, areas west of the Continental Divide have a lower probability of containing paleontologic resources than do areas east of the Continental Divide. Further, the Northeastern and Eastern Land Offices have a lower probability of containing cultural resources associated with cambium harvest and hard rock mining than do areas in the Central, Southwestern, and Northwestern Land Offices. Because a number of

environmental and geologic factors must be taken into consideration when attempting any kind of predictive modeling, topography alone should never be the deciding factor as to whether or not an inventory of cultural and paleontologic resources is warranted.

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3.4.3.4 Regional Overview

- Northwestern Land Office – Paleontologic resources are rare within the Northwestern Land Office area and prehistoric/protohistoric cultural resources tend to be concentrated in the major drainage bottoms. Campsite remnants, mature ponderosa pine trees which exhibit cambium extraction scars, white pine nut collection sites, short term stone tool manufacturing/maintenance sites (lithic scatters), vision quest sites, rock art sites, and trails/travel corridors are the kinds of prehistoric and protohistoric cultural resources typically encountered within the area. Typical cultural resources within the area of historic age include evidences of past coal, hard rock and placer mining activities, features associated with timber harvesting/lumber production activities, homesteads, sheep/cattle ranches, railroads, abandoned town sites, fire towers/lookouts, and historic travel routes.
- Southwestern Land Office – Paleontologic resources are rare within the Southwestern Land Office area and prehistoric/protohistoric cultural resources tend to be concentrated in the major drainage bottoms. Campsite remnants, mature ponderosa pine trees which exhibit cambium extraction scars, white pine nut collection sites, short term stone tool manufacturing/maintenance sites (lithic scatters), tool stone quarry sites, vision quest sites, rock art sites, stone circles (tipi rings), trails/travel corridors and to a limited extent, bison kill sites and cairn alignments associated with bison hunting activities are the kinds of prehistoric and protohistoric cultural resources typically encountered within the area. Typical cultural resources within the area of historic age include evidences of past hard rock and placer mining activities, features associated with timber harvesting/lumber production activities, homesteads, sheep/cattle

ranches, railroads, abandoned town sites, fire towers/lookouts, and historic travel routes.

- Central Land Office – Paleontologic resources occur with moderate frequency in the northern ½ of the area, but are less common in the southern ½ of the area. Because of the greater variability in topography and ecotones, prehistoric/protohistoric cultural resources can be expected to occur on all landforms except the steepest slopes. Campsite remnants, white pine nut collection sites, short term stone tool manufacturing/maintenance sites (lithic scatters), tool stone quarry sites, vision quest sites, rock art sites, stone circles (tipi rings), isolated cairns, bison kill sites and cairn alignments associated with bison hunting activities, and to a limited extent, trails/travel corridors are the kinds of prehistoric and protohistoric cultural resources typically encountered within the area. Typical cultural resources within the area of historic age include evidences of past coal, hard rock and placer mining activities, features associated with timber harvesting/lumber production activities, homesteads, farms, sheep/cattle ranches, railroads, abandoned town sites, fire towers/lookouts, and historic travel routes.
- Northeastern Land Office – Paleontologic resources occur with moderate to high frequency throughout the Northeastern Land Office area. With the exception of the Missouri River Breaks, topography in the Northeastern Land Office area exhibits less relief overall than any of the previously described areas and cultural resources can be expected to occur on all landforms in the area. Campsite remnants, short term stone tool manufacturing/maintenance sites (lithic scatters), tool stone quarry/collection sites, vision quest sites, stone circles (tipi rings), isolated cairns, bison kill sites and cairn alignments associated with bison hunting activities are the kinds of prehistoric and protohistoric cultural resources typically encountered within the area. Typical cultural resources within the area of historic age include evidences of past coal mining activities, features associated with timber harvesting/lumber production activities, farms, homesteads, sheep/cattle ranches, railroads, abandoned town sites, and historic travel routes.
- Southern Land Office – Paleontologic resources occur with moderate to high frequency throughout the Southern Land Office area. As with the Central Land Office area, because of the great variability in topography and ecotones, prehistoric/protohistoric cultural resources can be expected to occur on all landforms except the steepest slopes. Campsite remnants, white pine nut collection sites, short term stone tool manufacturing/maintenance sites (lithic scatters), tool stone quarry sites, vision quest sites, rock art sites, stone circles (tipi rings), isolated cairns, bison kill sites and cairn alignments associated with bison hunting activities, and to a limited extent, dry-laid masonry structures, and trails/travel

corridors are the kinds of prehistoric and protohistoric cultural resources typically encountered within the area. Typical cultural resources within the area of historic age include evidences of past coal, hard rock and placer mining activities, features associated with timber harvesting/lumber production activities, farms, homesteads, sheep/cattle ranches, railroads, abandoned town sites, fire towers/lookouts, and historic travel routes.

- Eastern Land Office – Paleontologic resources occur with moderate to high frequency throughout the area. Topography in the Eastern Land Office area exhibits less relief overall than any of the previously described areas and cultural resources can be expected to occur on all landforms in the area. Campsite remnants, short term stone tool manufacturing/maintenance sites (lithic scatters), tool stone quarry/collection sites, vision quest sites, rock art sites, stone circles (tipi rings), isolated cairns, bison kill sites and cairn alignments associated with bison hunting activities are the kinds of prehistoric and protohistoric cultural resources typically encountered within the area. Typical cultural resources within the area of historic age include evidences of past coal mining activities, features associated with timber harvesting/lumber production activities, farms, homesteads, sheep/cattle ranches, railroads, abandoned town sites, and historic travel routes.

3.4.4 Community Infrastructure

3.4.4.1 Statewide Overview

The condition of community infrastructure varies across the state. Transportation systems, sewer and water facilities, public facilities and services generally reflect local economic conditions and the ability of the tax base to support construction and maintenance. Typically communities prepare capital improvement plans to address overall community infrastructure and services needs, based on need and the availability of financing. Projects are typically financed through a combination of state and federal funding and local mechanisms including special improvement districts, general obligation and revenue bonds, and direct appropriation.

Montana's land use statutes, particularly the Montana Subdivision law requires that new subdivisions provide adequate infrastructure to support the development. The costs associated with the provision of streets, sidewalks, lighting, sewer and water is typically paid by the developer and/or the ultimate owners of the property involved.

3.4.4.2 The Role of Community Infrastructure in the REMB Program

Infrastructure is key to the development of residential, industrial and commercial uses on state Trust Lands. The condition of community infrastructure – streets, sewer systems, utilities, lighting, public facilities – varies across the state, depending on the age of systems, the availability of financial resources for construction and maintenance. The REMB intends to evaluate the availability and accessibility of infrastructure as part of the overall project selection funnel process (see Chapter 2). Projects that are designed to take advantage of existing infrastructure capacity are likely to be more feasible. In

addition, in those cases where the Bureau works with a developer in preparing a site for a specific use, additional, new infrastructure may be required for project implementation. Generally, it will be the responsibility of the developer and/or the community as a whole to provide the necessary infrastructure.

3.4.5 Taxation

3.4.5.1 Property Taxes

- State Overview – Property in Montana is subject to advalorem taxes levied on the basis of property type and value. The Montana legislature has determined that different types of property and property used for different purposes should be taxed at different rates and bear a different proportion of the overall tax burden. Under 15-6-101MCA, the state has identified a variety of property classifications. Among these are Class 3 – Agriculture, Class 4 – residential and commercial real estate, Class 10 – Forested Lands, and eight other classifications. (Industrial properties are classified under a variety of categories depending on the specific type of industry). Property tax rates are calculated in the following manner: The assessed valuation of the property is multiplied by the classification rate to obtain the taxable value. Taxable values are then multiplied by the local mill levy to derive the actual tax. A mill is equal to 1/1000 of the entire taxable value of the jurisdiction of the county and municipality within which the property is located. The number of mills levied varies by jurisdiction and is dependent on the overall tax base. Property taxes are levied on both the value of the land and on any improvements. Generally, approximately two thirds of the property taxes collected help fund the local public school system, K-12. Seven mills are directed to the state university system and the remaining one third supports local government services and infrastructure.

Non-permanent residential improvements such as trailers and recreational cabins located on leased properties are taxed under Montana's personal property statutes.

- Special Fees and Assessments – In addition to property taxation, land and improvements are subject to a variety of special fees for services (garbage, fire and ambulance) and capital improvements (streets, sidewalks, sewers, lighting). Payments for these services are often paid through special improvement districts (SID's) or Rural Improvement Districts (RID's). Properties exempt from advalorem taxes are not necessarily exempt from special fees.
- Exemptions – Lands and improvements owned by local, state and federal government agencies are exempt from property taxes as are properties owned by certain non-profit organizations.

- Beneficial Use Taxes – Exempt land and improvements that are leased to a private entity engaged in a business activity are subject to taxation. Under 15-24-1203, MCA a tax is imposed and must be collected “upon the possession or other beneficial use for industrial, trade or other business purposes enjoyed by any private individual, association or corporation of any property, real or personal, that for any reason is exempt from taxation.” The tax is calculated in the same manner as for non-exempt properties.
- The Role of Taxation in the REMB Program
 - Commercial and Industrial Properties – Currently, properties that are leased for commercial and industrial purposes are subject to beneficial use taxes. Lessees pay a beneficial use tax on real and personal property used in their trade or business per 15-24-1203, MCA. The REMB works with lessees, the Montana Department of Revenue and local taxing jurisdictions to assure compliance. As a result, local communities benefit from taxes associated with commercial and industrial uses on land that is otherwise exempt from property taxation. In addition, commercial and industrial lessees would be subject to fees and assessments for specific improvements and services.
 - Residential Properties – Residential lessees on Trust Lands are subject to personal property taxes on non-permanent residential properties including recreational cabins and trailers. In certain cases, they may also be subject to special assessments for area improvements and services.

3.4.5.2 State Equalization Payments to Counties

In 1965, legislation was adopted providing for reimbursement to counties for loss of revenue where tax-exempt state land constituted in excess of 6% of total land area. Funds were paid to counties and distributed to the elementary school districts (60% of the payment) and to the county road funds (40%). Subsequent changes in Montana statute have addressed the incorporation of the Trust Land Management program into the Montana Department of Natural Resources and Conservation and associated administrative changes. In 2001, the state overhauled its entire system of shared revenues. However, counties continue to be reimbursed for the tax-exempt state land in excess of 6% of the total land area pursuant to the original intent of the 1965 legislation. Over the past four years, the total amount paid to counties has averaged \$550,000 annually. Table 3-26 displays the top 5 counties receiving the most State Equalization Payments.

County	FY98	FY99	FY00	FY01	FY02
Daniels	168,894	202,878	189,055	198,046	262,656
Chouteau	121,049	122,137	120,305	121,846	127,825
Beaverhead	48,485	54,032	58,178	66,535	68,749

Table 3-26. Counties Receiving the Highest Equalization Payments					
County	FY98	FY99	FY00	FY01	FY02
Hill	41,678	43,404	45,750	46,452	47,941
Judith Basin	22,383	22,947	23,865	26,253	28,015

Chapter 4

Environmental Consequences

Introduction and Purpose of the Chapter

This Chapter provides a description of the impacts on the quality of the human environment for each of the proposed alternative actions. Integral to the analysis is a concept that growth indices (population/economics) can be estimated into the future and that trust lands would attempt to participate in varying degrees to the expected growth. Demographic analyses are used to predict the relative scale (acres) and location of future growth in the state. Information is summarized on a regional basis that corresponds to DNRC administrative land office regions.

Estimates of new growth are summarized by Land Office Region together with the corresponding share of growth expected on trust lands. The acres of new residential, commercial, industrial, and conservation uses sets the framework for identifying and evaluating effects of implementing each of the PEIS's alternatives.

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4.1 INTRODUCTION

DNRC has used available data to predict environmental effects associated with each alternative. A level of uncertainty is associated with any exercise in predicting outcomes, especially where natural systems are involved. The prediction of effects on environmental resources described in this chapter of the Programmatic EIS is intended to allow a comparison of alternatives.

Trust lands are located throughout Montana and are influenced to varying degrees by land use growth and development of the nearby communities. In some situations, trust lands are becoming surrounded by new growth and may be an essential component for orderly growth and development of a community. For most situations, it would be appropriate and responsible for the REMB to participate in the local community planning processes.

Commercial and industrial development on trust lands would likely occur in urban areas or along major transportation corridors. Residential development opportunities would likely be greater in the western Montana Land Office areas (Northwestern, Southwestern, and Central) as compared to the eastern Montana (Northeastern, Southern, and Eastern) Land Office areas. New development on trust lands through the year for commercial, industrial, or residential uses is likely to total less than one percent of the total trust land area.

4.1.1 Land Base and Filtration Methodology

Trust land represents approximately 5.4 percent of the total land area in Montana. The total trust land acreage serves as a pool of potential land available for residential, commercial, industrial, and agricultural uses. Under the plan alternatives of this PEIS, a funnel filtration process is described to reduce the available pool of lands to only those that may have high suitability for real estate opportunities. Methodology is described in Chapter 2 that explains how lands are screened through physical, transitional, and market filters to narrow the type of lands that might have some potential for development or conservation. Additional filters would be used at a project level to define project level opportunities.

4.1.2 Growth Indices

Chapter 3 sets the historical background to population and economic growth in Montana. The information in Table 3-3 is used to help estimate future population and economic growth through the year 2025, which is presented in table 4-1. The population of Montana is expected to increase from approximately 903,00 (2000) to 1.16 million by the year 2025. Most of the increased population growth and associated development is expected in the westerly land office regions (CLO, NWLO, SWLO) of the state. Populations within the Northeastern Land Office and Eastern Land Office are expected to decline.

Table 4-1. Population and Income Projections* by Land Office Region

	2000	2005	2010	2015	2020	2025
Northwestern Land Office (NWLO)						
TOTAL POPULATION (THOUSANDS)	130.476	142.142	154.293	166.84	179.68	193.044

Table 4-1. Population and Income Projections* by Land Office Region						
	2000	2005	2010	2015	2020	2025
NONFARM LABOR INCOME	1672.308	1928.284	2186.426	2462.842	2761.298	3085.053
PERSONAL INCOME	2704.567	3119.866	3554.505	4030.761	4556.281	5138.890
PCI	20728.46	21948.94	23037.37	24159.44	25357.75	26620.30
Southwestern Land Office (SWLO)						
TOTAL POPULATION (THOUSANDS)	190.216	201.85	216.04	230.708	245.88	261.605
NONFARM LABOR INCOME	2823.635	3205.967	3625.740	4079.457	4575.769	5122.714
PERSONAL INCOME	4204.704	4761.363	5428.979	6165.806	6980.874	7883.928
PCI	22104.89	23588.62	25129.51	26725.58	28391.38	30136.76
Central Land Office (CLO)						
TOTAL POPULATION (THOUSANDS)	285.947	299.152	314.599	330.854	347.833	365.603
NONFARM LABOR INCOME	4356.937	4874.543	5426.837	6031.102	6688.235	7400.337
PERSONAL INCOME	6675.899	7492.185	8315.138	9226.090	10232.14	11342.61
PCI	23346.63	25044.74	26430.91	27885.68	29416.83	31024.39
Northeastern Land Office (NELO)						
TOTAL POPULATION (THOUSANDS)	79.729	78.045	77.427	77.038	76.827	76.759
NONFARM LABOR INCOME	780.9301	841.0773	895.4571	955.1436	1021.023	1093.873
PERSONAL INCOME	1623.319	1778.706	1887.169	2006.996	2139.766	2286.971
PCI	20360.46	22790.77	24373.53	26052.03	27851.75	29794.17
Southern Land Office (SLO)						
TOTAL POPULATION (THOUSANDS)	169.039	177.638	186.731	196.342	206.354	216.874
NONFARM LABOR INCOME	2806.166	3110.595	3427.488	3775.578	4158.862	4582.347
PERSONAL INCOME	4124.626	4581.461	5059.633	5589.857	6179.484	6837.376
PCI	24400.44	25791.00	27095.84	28470.00	29946.03	31526.95
Eastern Land Office (SLO)						
TOTAL POPULATION (THOUSANDS)	48.009	47.284	47.287	47.434	47.647	47.952
NONFARM LABOR INCOME	614.0315	691.2994	749.6756	810.4908	873.7881	939.6587
PERSONAL INCOME	1005.657	1114.330	1195.929	1283.100	1376.427	1476.556
PCI	20947.26	23566.76	25290.86	27050.22	28888.02	30792.38
Montana						
TOTAL POPULATION (THOUSANDS)	903.416	946.111	996.377	1049.216	1104.221	1161.837
NONFARM LABOR INCOME	13054.00	14651.76	16311.62	18114.61	20078.97	22223.98
PERSONAL INCOME	20338.77	22847.91	25441.35	28302.61	31464.98	34966.33
PCI	22513.18	24149.29	25533.86	26975.01	28495.18	30095.73

Table 4-1. Population and Income Projections* by Land Office Region

	2000	2005	2010	2015	2020	2025
Table Notations: Income is expressed in 2000 dollars, PCI = Per Capita Income						
Source: Polzin 2004						

The regional growth estimates in the previous table were used to model the number of acres that would be developed for rural residential and commercial/industrial uses (Jackson 2004, Appendix XXX) Expected growth of residential uses (lot sizes >1acre <26 acres) and commercial/industrial land uses within land office regions for all land ownerships is described in Tables 4-2 and 4-3 and in Map Exhibits 4-1 and 4-2. It is anticipated that most of the new single-family residential opportunities would be achieved through sale, while most of the industrial and commercial (including multi-family residential) opportunities would be achieved through lease. Conservation opportunities are not necessarily restricted by alternative but the growth in conservation acres is less predictable since this type of land use is not necessarily linked to market (growth) conditions. Most of the conservation objectives would be achieved through the lease or sale of development rights or purchase of conservation easements.

Table 4-2. Growth Estimates for Rural Residential Acreages on all Land Ownerships

Land Office Region	Growth Estimates (acres) by Time Period				
	2003-2010	2011-2015	2016-2020	2021-2025	Totals
NWLO	10,776 – 17,960	7,016 – 11,694	7,181 – 11,968	7,474 – 12,456	32,446-54,078
SWLO	8,575 – 14,291	5,918 – 9,863	6,122 – 10,203	6,344 – 10,574	26,959-44,931
CLO	2,739 – 4,565	5,293 – 8,821	5,570 – 9,283	5,818 – 9,696	19,420-32,365
NELO	(225) – (135)	46 - 76	67 - 111	96 – 160	(16) - 212
SLO	3,270 – 5,450	2,197 – 3,661	2,289 – 3,815	2,405 – 4,008	10,161-16,934
ELO	(213) – (128)	31 - 51	72 - 120	49 - 81	(61) - 124
Grand Total	24,922 – 42,003	20,501 – 34,166	21,301 – 35,400	22,186 – 36,975	88,909-148,644

Source: Jackson 2004

Table 4-3. Growth Estimates for Commercial/Industrial Acreages on all Land Ownerships

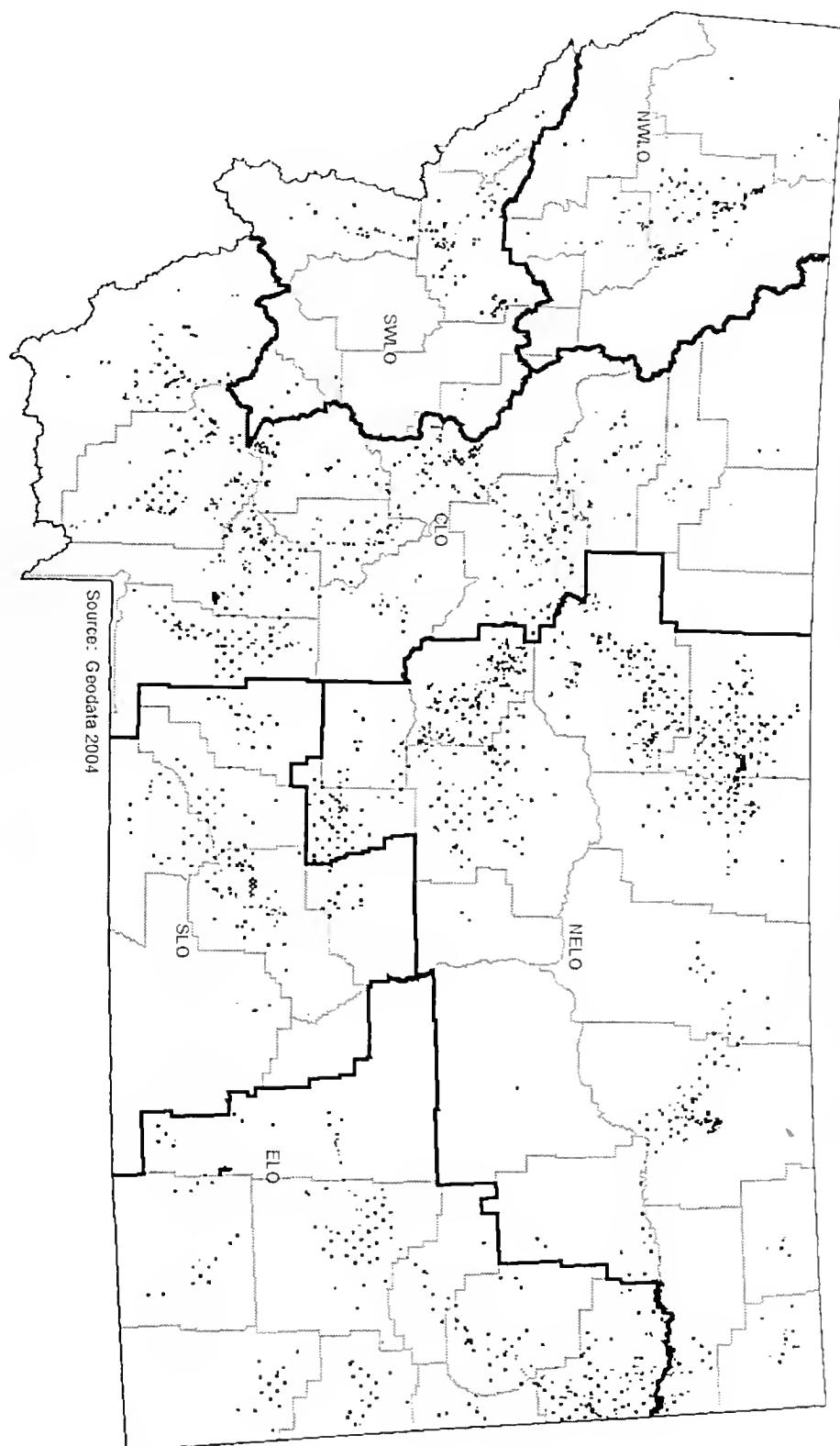
Land Office Region	Growth Estimates (acres) by Time Period				
	2002-2010	2011-2015	2016-2020	2021-2025	Totals
NWLO	2,540 – 4,234	1,678 – 2,796	1,854 – 3,090	2,051 – 3,418	8,123-13,538
SWLO	3,157 – 5,261	2,090 – 3,483	2,344 – 3,906	2,615 – 4,358	10,206-17,008
CLO	3,784 – 6,306	2,379 – 3,965	2,685 – 4,475	2,977 – 4,961	11,825-19,707
NELO	777 – 1,295	615 – 1,025	668 – 1,114	736 – 1,226	2,796-4,660
SLO	2,606 – 4,344	1,725 – 2,875	1,935 – 3,225	2,159 – 3,598	8,425-14,042
ELO	320 - 533	132 - 220	155 - 258	170 - 283	777-1,294
Grand Total	13,184 – 21,973	8,619 – 14,364	9,641 – 16,068	10,708 – 17,844	42,152-70,249

Source: Jackson 2004

The Trust Land share of growth in each of these land office regions varies by alternative as described in Chapter 2, Section 5.

Map Exhibit 4-1

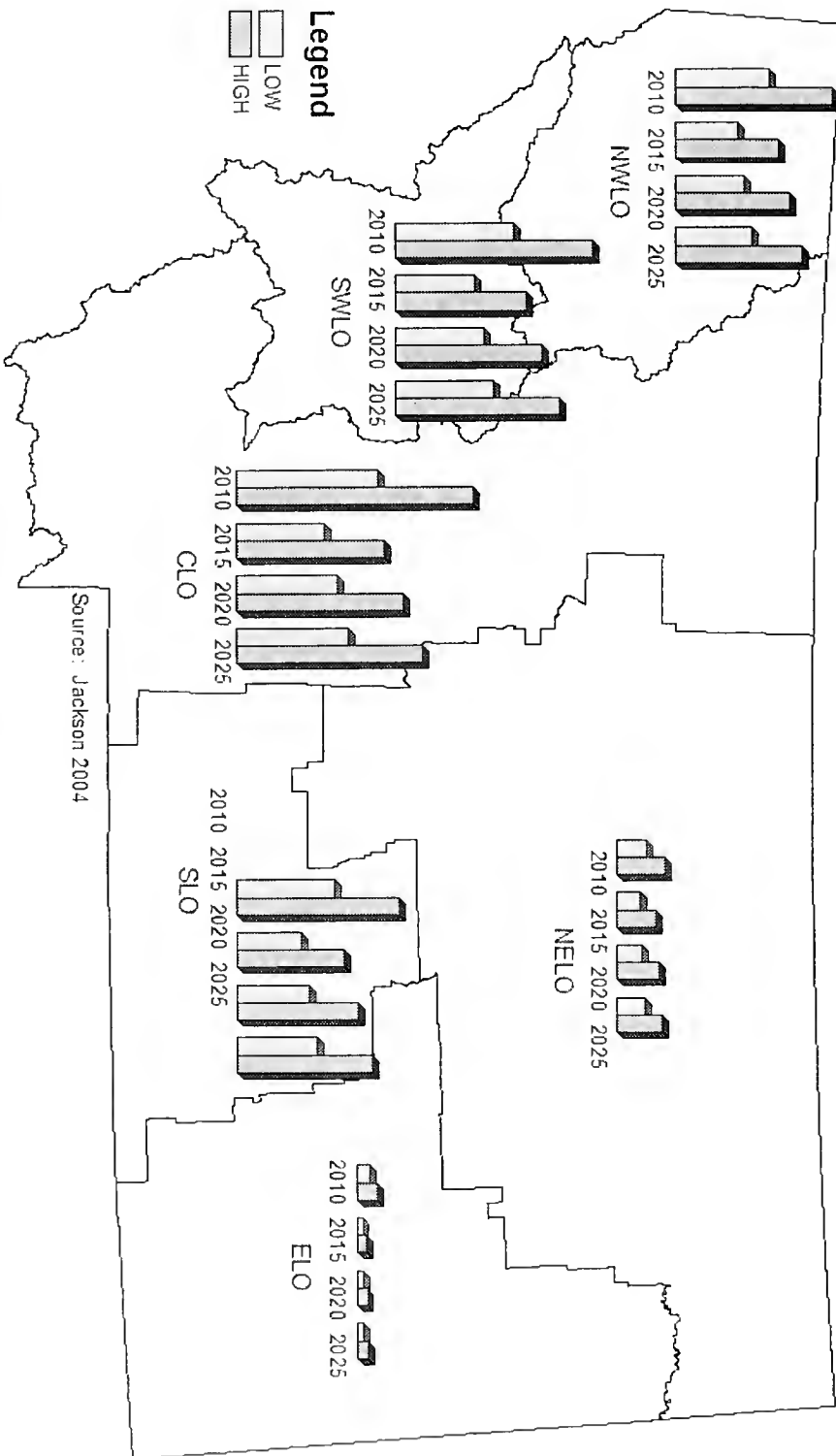
Lands with Higher Potential for Rural Residential Development



Source: Geodata 2004

Map Exhibit 4-2

Growth Estimates for Commerical/Industrial Acreages on all Land Ownerships



4.1.3 Summary Description of Alternatives

This section provides a summary of the estimated number of acres of trust lands that would be reclassified to "other", including conservation, or developed for residential, commercial, or industrial uses under each alternative through the year 2025. Detailed descriptions of each alternative are included in Chapter 2.

4.1.3.1 Alternative A – Current Program

Implementation of Alternative A would result in DNRC continuing the current administration of the Real Estate Management Program. The number of new acres estimated for residential, commercial, and industrial uses on trust lands under the current program, for each land office, is displayed in Table 4.4.

TABLE 4-4. ALTERNATIVE A – Estimated Number of New Developed and Conservation Acres on Trust Lands Through the Year 2025*

Land Use Designation	LAND OFFICE REGION						Totals
	NWLO	SWLO	CLO	NELO	SLO	ELO	
Residential	2,163	1,258	1,036	4	271	1	4,733
Commercial/Industrial	555	489	647	172	231	42	2,136
Conservation	778	375	3,975	4,668	130	649	10,575
Total	3,496	2,122	5,658	4,844	632	692	17,444

* These are mid range values and the actual acreages could vary by plus or minus 25%

Source: Jackson 2004

Under Alternative A, the estimated acres of new industrial and/or commercial use ranges from 42 in the Eastern Land Office to 647 in the Central Land Office and 2,136 acres for all Land Office areas. The total commercial/industrial acreage estimate would represent approximately 0.04 percent of the total Trust Land in Montana. The estimated number of new residential acres under Alternative A ranges from 1 in the Eastern Land Office to 2,163 in the Northwestern Land Office. The total developed residential acreage of 4,733 would represent 0.09 percent of the total Trust Land in Montana.

The REMB would try to secure approximately 10,575 acres of conservation lands (including purchased development rights) during the life of the Plan.

4.1.3.2 Alternative B – Diversified Portfolio

Under this alternative, the REMB would actively participate in the regional market economy by trying to keep pace competitively with the development growth related to residential, commercial, and industrial uses. The REMB would need additional staff and funding to proportionally share in the anticipated growth of those 3 land

use sectors (refer to Chapter 2. The number of new developed and conservation acres is estimated Table 4-5.

TABLE 4-5. ALTERNATIVE B – Estimated Number of New Developed and Conservation Acres on Trust Lands Through the Year 2025*

	LAND OFFICE REGION						
Land Use Designation	NWLO	SWLO	CLO	NELO	SLO	ELO	Totals
Residential	4,325	2,515	2,072	9	541	3	9,465
Commercial/Industrial	1,083	953	1,262	335	449	83	4,165
Conservation	1,348	813	7,196	7,091	456	1,299	18,203
Total	6,756	4,281	10,530	7,435	1,446	1,385	31,833

* These are mid range values and the actual acreages could vary by plus or minus 25%

New commercial and/or industrial uses under Alternative B would total approximately 4,165 acres or about 2,029 acres more than anticipated by Alternative A. Development of 3,298 acres of commercial/industrial uses in western Montana Land Office areas (Northwestern, Southwestern, and Central Land Office areas) would represent about 0.18 percent of the total trust land area in those Land Office areas. Overall, new commercial and industrial acres would total less than 0.01% of the total trust land area.

New residential acres would total approximately 9,465 acres, with most of the related development occurring in the western land offices. Residential development in the 3 westerly land offices would exceed that of easterly land offices by over eight times (4,587 acres versus 553 acres, respectively). Conversion of 4,587 acres to residential use in the 3 most western Land Office areas would represent about 0.25 percent of the total Trust Lands in those Land Office areas. Overall, new residential acres would total less than 0.1% of the total trust land area.

The REMB would try to secure approximately 18,203 acres of conservation lands (including purchased development rights) during the life of the Plan.

4.1.3.3 Alternative B-1 – Diversified Portfolio, Conservation Priority

Under this Alternative, the REMB would strive to achieve the conservation acres shown in Table 4-5. Under B-1, the total estimate of 9,465 acres for new residential acres (Table 4-5) would be reduced to 4,732 acres to encourage additional opportunities for conservation uses on residentially valued properties.

4.1.3.4 Alternative C – Focused Portfolio

Implementation of Alternative C would result in the expansion of the Real Estate Management Program to secure more of the projected growth market in the state compared to Alternatives A and B, thereby increasing the revenue return to the state from selected

lands. The number of new developed and conservation acres under Alternative C is estimated in Table 4.6.

TABLE 4-6. ALTERNATIVE C – Estimated Number of New Developed and Conservation Acres on Trust Lands Through the Year 2025*

Land Use Designation	LAND OFFICE REGION						
	NWLO	SWLO	CLO	NELO	SLO	ELO	Totals
Residential	8,652	5,032	4,143	18	1,084	5	18,934
Commercial/Industrial	2,166	1,905	2,523	671	899	165	8,329
Conservation	1,780	1,208	9,701	9,438	738	1,554	24,419
Total	12,598	8,145	16,367	10,127	2,721	1,724	51,682

* These are mid range values and the actual acreages could vary by plus or minus 25%

New commercial/industrial acres range from 165 in the Eastern Land Office area to 2,523 in the Central Land Office area. Most of the new industrial and commercial uses would occur in the high growth areas of western and central Montana. The total estimated acres of 8,329 represents approximately 0.1% of the total trust land area.

Estimates of new residential acres range from 5 in the Eastern Land Office area to 8,652 acres in the Northwestern Land Office area under Alternative C. Eastern Montana Land Office areas (Northeastern, Southern, and Eastern) would see a combined total of 1,107 acres of residential acres versus 17,827 acres in the western Montana Land Office areas (Northwestern, Southwestern, and Central). The total residential estimate of 18,934 represents approximately 0.3% of the total trust land area.

Under Alternative C, the REMB would try to secure approximately 24,419 acres of conservation lands (including purchased development rights) during the life of the Plan.

4.1.3.5 Alternative C-1 – Focused Portfolio, Conservation Priority

Under this Alternative, the REMB would strive to achieve the conservation acres as shown in Table 4-6. Conservation use would generally be achieved through the lease or sale of development rights on lands with residential values. Under C-1, the total estimate of 18,934 acres for new residential acres (Table 4-6) would be reduced to 9,467 acres to encourage additional opportunities for conservation uses on residentially valued properties.

4.1.4 Regulatory Requirements

Commercial, industrial, and residential land uses in Montana are subject to three principle types of local land use policy. These include growth policies (formerly comprehensive or

master plans), zoning regulations and subdivision regulations. Descriptions of local land use policy and regulatory processes are located in Chapter 5.

In addition to local land use policy and regulatory requirements, activities conducted on Trust Lands will require compliance with a variety of other state regulations. Principle regulations include the Clean Water Act, Clean Air Act, and the Montana Antiquities Act. DNRC staff administers the Montana Antiquities Act as it applies to land use decisions. DNRC consults with Montana Department of Environmental Quality for administration and compliance with the Clean Air and Water Acts.

All activities must comply with water quality standards and air quality standards as adopted by the State of Montana. Proposed projects are reviewed to determine whether compliance with these standards will be achieved. Projects authorized by DNRC may require monitoring (air and/or water) to ensure that the developer or the agency is meeting applicable standards. Compliance with the State Antiquities Act requires DNRC to identify cultural or paleontological resources on Trust Lands, evaluate the significance of those resources, and determine feasibility of limiting, avoiding, or mitigating impacts to these resources.

In circumstances where local land use policies do not address the breadth of public involvement or environmental analysis that DNRC must adhere to in making project level decisions under the Montana Environmental Policy Act (MEPA), DNRC would review the project to address those elements. Detailed descriptions of site conditions and potential impacts would be completed on a project level basis for each land use proposal, whether generated by outside parties or DNRC through the funnel filtration process as described in Chapter 2.

4.1.5 Project Selection & Prioritization

Chapter 2, Section 3 describes a programmatic approach to the identification and selection of real estate opportunities on Trust Lands under each of the action alternatives. The approach is a systematic process that offers a filtration methodology for identifying lands that may ultimately be suitable for residential, conservation, commercial and/or industrial purposes. All Trust Lands would be "filtered" through a series of eight (8) processes to determine project level opportunities. The REMB would use an ID (Identification) Team approach to develop one, 3, and 5 year project lists (refer to Figure 2.5). Under the existing program of the REMB (represented by Alternative A), the project selection and prioritization methodology is less structured. Project opportunities are more often reactive than proactive and project priorities are identified from annual meetings of a Commercial Development Working Group.

4.2 PREDICTED EFFECTS ON ALL AFFECTED ENVIRONMENTAL RESOURCES

4.2.1 Statewide Demographic Relationships

4.2.1.1 Direct and Indirect Impacts

- Alternative A – Current Program

- Industrial and Commercial Uses – The current program is primarily reactive to commercial and industrial opportunities. Current program operations (staffing and funding) would probably limit the ability of the REMB to fully participate in market forces. It is assumed that commercial and industrial uses on Trust Lands would be less than proportional (land ratios) to similar development on other lands. Development on Trust Lands would not be growth (population) inducing since the same level of development and population growth would occur whether or not Trust Lands share in that growth.
- Residential Uses – The current program is primarily reactive to residential opportunities. Current program operations (staffing and funding) would probably limit the ability of the REMB to fully participate in market forces. It is assumed that rural residential uses on Trust Lands would be less than proportional (land ratios) to similar development on other lands. Development on Trust Lands would not be growth (population) inducing since the same level of development and population growth would occur whether or not Trust Lands shared in that growth.
- Conservation – The current program is primarily reactive to conservation opportunities on Trust Lands. The lease and sale of development rights and conservation leases, licenses, and easements would continue and would likely increase somewhat, based upon market demand and interest. Some marketing could be used to help identify parties that might have some interest in purchasing conservation rights. Additional conservation lands may encourage, but would not directly contribute to, new growth in the State.
- Alternative B – Diversified Portfolio
 - Industrial and Commercial Uses – The operation of the REMB under Alternative B would be more proactive than reactive to commercial and industrial opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. It is assumed that commercial and industrial uses on Trust Lands would be proportional (land ratios) to similar development on other lands. Development on Trust Lands would not be growth (population) inducing since the same level of development and population growth would occur whether or not Trust Lands share in that growth.
 - Residential Uses – The operation of the REMB under Alternative B would be more proactive than reactive to residential opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. It is assumed that residential

opportunities on Trust Lands would be proportional (land ratios) to those on other lands. Development on Trust Lands would not be growth (population) inducing since the same level of development and population growth would occur whether or not Trust Lands shared in that growth.

- Conservation Uses – Conservation opportunities would be pursued under this alternative. Land acreages with leased or purchased development rights would increase based upon market demand and interest. Marketing towards targeted organizations would be used to help focus interest on conservation opportunities. Additional conservation lands may encourage, but would not directly contribute to, new growth in the State.
- Alternatives B-1 – Diversified Portfolio – Conservation Priority – The program under Alternative B-1 would not differ from B with regard to the level of activity in the pursuit of residential, industrial/commercial, or conservation uses for Trust Lands. However, conservation uses (which would occur primarily on lands that have rural residential values) would reduce the number of acres placed in residential use. This would have the effect of directing rural residential development elsewhere in the market area. Additional conservation lands may encourage but would not directly contribute to new growth to the State.
- Alternative C – Focused Portfolio
 - Industrial and Commercial Uses – The operation of the REMB under Alternative C would be reactive and proactive to commercial and industrial opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. It is assumed that commercial and industrial uses on Trust Lands would be proportionally higher (land ratios) than what would occur on other lands. Development on Trust Lands would not be growth (population) inducing since the same level of development and population growth would occur whether or not Trust Lands shared in that growth.
 - Residential Uses – The operation of the REMB under Alternative C would be reactive and proactive to residential opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. It is assumed that residential opportunities on Trust Lands would be proportionally higher (land ratios) than what would occur on other lands. Development on Trust Lands would not be growth (population) inducing since the same level of development and population growth would occur whether or not Trust Lands shared in that growth.

- Conservation Uses – Conservation opportunities would be pursued under this alternative. Land acreages with leased or purchased development rights would increase based upon market demand and interest. Marketing towards targeted organizations would be used to help focus interest on conservation opportunities. Additional conservation lands may encourage, but would not directly contribute to, new growth in the State.
- Alternative C-1 – Focused Portfolio – Conservation Priority – The program under Alternative C-1 would not differ from C with regard to the level of activity in the pursuit of residential, industrial/commercial, or conservation uses for Trust Lands. However, conservation uses (which would occur primarily on lands that have rural residential values) would reduce the number of acres placed in residential use. This would have the effect of directing rural residential development elsewhere in the market area. Additional conservation lands may encourage but would not directly contribute to new growth to the State.

4.2.1.2 Cumulative Effects

The proposed alternatives would not create a demand for additional commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the PEIS would allow the REMB to participate in the existing growth market in the state. Development of commercial, residential, or industrial uses on Trust Lands would not necessarily stimulate or promote growth on other state (non Trust) lands. No population increase would occur beyond what is projected for general community growth.

4.2.1.3 Residual Adverse Effects

No residual adverse effects would result with “growth” (residential, commercial, industrial) on Trust Lands associated with any of the alternatives presented in this PEIS. Growth would occur in accordance with land use policy and regulatory processes and MEPA analysis, as appropriate. An assumption is made that the same level of growth would occur, regardless (of whether it occurred on Trust Lands), since growth is a product of need and demand. In some situations, it could be demonstrated that Trust Lands may be better suited for growth and development than some non-Trust Lands. Population and economic conditions would not change under any of the alternatives.

4.2.1.4 Irretrievable and Irreversible Commitment of Resources

Implementation of the alternatives would not result in an irreversible or irretrievable commitment of resources. Compliance with local, state, and federal regulations and regulatory review processes would minimize the adverse effects of growth. There would be no additional demand on resources beyond what is projected for new growth in a particular land office region.

4.2.1.5 Short-Term Versus Long-Term Productivity

Trust Lands suitable in the near term for residential, commercial, conservation, and industrial uses would be suitable for similar uses in the long term. Market cycles provide for redevelopment or adaptive reuse of existing structures.

4.2.2 Real Estate Management Bureau

4.2.2.1 State-Wide Overview

The REMB of the TLMD would manage lands suitable for commercial, industrial, residential and conservation uses as described in Chapter 2 under all alternatives. This would include leasing and licensing lands for residential, commercial, industrial, and conservation uses. The REMB would also administer land sales, land exchanges, and land easements. Chapter 2 describes the current process for selecting projects that would continue under Alternative A, as well as the Funnel approach that would be used to select projects under all of the action alternatives (see Figure 2-4 in Chapter 2). Program emphasis, staffing, and funding resources would vary by alternative. Map Exhibits 4-1 and 4-2 display the general locations of trust lands that have been initially screened as having higher potential for rural residential and commercial/industrial uses (See report by Geodata Services 2004).

4.2.2.2 Direct and Indirect Impacts

- Alternative A – Current Program
 - Industrial and Commercial Uses – The current program is primarily reactive to commercial and industrial opportunities. Current program operations (staffing and funding) would probably limit the ability of the REMB to fully participate in market forces. Staffing levels and staffing expertise would not appreciably change under this alternative. The availability of funding for improving land entitlements would probably remain constant to the current situation.
 - Residential Uses – The current program is primarily reactive to residential opportunities. Current program operations (staffing and funding) would probably limit the ability of the REMB to fully participate in market forces. Staffing levels and staffing expertise would not appreciably change under this alternative. The availability of funding for improving land entitlements would probably remain constant to the current situation.
 - Conservation Uses – The current program is primarily reactive to conservation opportunities on Trust Lands. The lease, license or sale of development rights would be an option if properly authorized by legislation. Conservation leases and licenses would be other mechanisms to accommodate conservation objectives.
- Alternative B – Diversified Portfolio

- Industrial and Commercial Uses – The operation of the REMB under Alternative B would be more proactive than reactive to commercial and industrial opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. Staffing levels would increase by three FTEs (Professional Engineer, Lease Administrator, Surveyor) to help respond more quickly to market opportunities. Staffing expertise would be expanded to consider greater involvement with land use planning and commercial and industrial leasing. Additional funding beyond current levels would be necessary to improve entitlements to property. Approximately \$500,000 annually would be authorized as new expenditures for land entitlement improvements (infrastructure, zoning, etc).
- Residential Uses – The operation of the REMB under Alternative B would be more proactive than reactive to residential opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. Staffing levels would increase (see above) to help respond more quickly to market opportunities. Staffing expertise would be expanded to consider greater involvement with land sales. Additional funding beyond current levels would be necessary to improve entitlements to property. Funding for improved land entitlements would not be in addition to the funding identified above.
- Conservation Uses – Conservation opportunities would be pursued under this alternative. Conservation lands would be in addition to the number of acres placed in developed use. Land acreages with leased or purchased development rights or conservation rights would increase based upon market demand and interest. Efforts to market, promote, and implement conservation opportunities would benefit from the increased staffing identified above.
- Alternative B-1 – Diversified Portfolio – Conservation Priority – The program under Alternative B-1 would not differ from B with regard to the level of activity in the pursuit of residential, industrial/commercial, or conservation uses for Trust Lands. Funding and staff requirements under Alternative B-1 would be similar to those required under Alternative B.
- Alternative C – Focused Portfolio
 - Industrial and Commercial Uses – The operation of the REMB under Alternative C would be proactive to commercial and industrial opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. Staffing levels would increase by one FTE (land Use Planner) over Alternative B to help respond more quickly to market

opportunities. Staffing expertise would be expanded to consider greater involvement with land use planning and commercial and industrial leasing. Approximately \$1 million annually would be authorized as new expenditures for land entitlement improvements (infrastructure, zoning, etc).

- Residential Uses – The operation of the REMB under Alternative C would be proactive to residential opportunities. Program operations (staffing and funding) would be improved to fully participate in market forces. Staffing levels would increase (see above) to help respond more quickly to market opportunities and staffing expertise would be expanded to consider greater involvement with land sales. Additional funding (see above) would be necessary to improve entitlements to property.
- Conservation Uses – Conservation opportunities would be pursued under this alternative. Conservation lands would be in addition to the number of acres placed in developed use. Land acreages with leased or purchased development rights or conservation rights would increase based upon market demand and interest. Land acreages with leased or “purchased development rights” would increase based upon market demand and interest. Efforts to market, promote, and implement conservation opportunities would benefit from the increased staffing identified above.
- Alternative C-1 – Focused Portfolio – Conservation Priority – The program under Alternative C-1 would not differ from C with regard to the level of activity in the pursuit of residential, industrial/commercial, or conservation uses for Trust Lands. Funding and staff requirements under Alternative C-1 would be similar to those required under Alternative C.

4.2.2.3 Cumulative Effects

There would be no cumulative effects to other state agencies from the proposed administration of the REMB under any of the alternatives. To the extent possible, new staff for the REMB would be achieved without additional FTEs through adjustment of existing staff assignments within the TLMD.

4.2.2.4 Residual Adverse Effects

There would be no residual adverse effects from the proposed administration of the REMB. The program would be operated to serve the financial interest of the Trusts while considering environmental resources under any of the alternatives

4.2.2.5 Irretrievable and Irreversible Commitment of Resources

There would be no irretrievable and irreversible effects from the proposed administration of the REMB under any of the alternatives.

4.2.2.6 Short Term versus Long Term Productivity

The TLMD is a first and foremost an asset management organization. Under all alternatives, as resources allow, it would evaluate the entire land base of Trust Lands and choose those portfolio and fiscal options that serve the long-term interests of the trusts.

4.2.3 Economics

4.2.3.1 Statewide Overview

The TLMD manages lands under four broad categories of use including forest management, agriculture, grazing and real estate. The largest share of income is from agriculture and grazing due to the vast acreages involved in those uses. Income from uses managed by the REMB contributes approximately 4 percent to the total annual trust revenue. However, on revenue per acre basis, commercial, industrial, residential and conservation uses generate over \$54 per acre, dwarfing agriculture and grazing at \$2.80 per acre. Although the acreage of new real estate lands is expected to remain under 1 percent of the total Trust Land acreage, the percentage of revenue from commercial, residential, industrial and conservation uses is expected to increase under all alternatives.

An economic analysis of each proposed alternative was prepared by Jackson (2004) and is included in Appendix D. Information in the report includes statistics related to revenue, expenses, rates of return, taxes, jobs, and personal income.

4.2.3.2 Direct and Indirect Impacts

- Alternative A – Current Program – Gross annual revenue under this alternative would be approximately \$3.8 million. This reflects income from leases and interest from the permanent trust fund. Estimated average rates of return for Alternative A would be approximately 2.76%.
- Alternative B – Diversified Portfolio – Gross annual revenue under this alternative would be approximately \$4.7 – \$5.3 million. Estimated average rates of return from Alternative B would be 4.66 – 5.13 percent. The latter higher rate of return would be achieved by funding improvements to enhance land entitlements.
- Alternative B-1 – Diversified Portfolio – Conservation Priority – Gross revenue under this alternative would be less than under Alternative B. While the REMB would seek to obtain residential value through the sale or lease of development and conservation rights, the value of those rights would vary somewhat depending on associated entitlements. The conservation market and legislative authorizations would ultimately decide the amount and mix of conservation strategies. In a general sense, annual rent (lease or license) for development or conservation rights would generate a higher rate of return as compared to permanent disposition of rights through a single purchase. If leasing were the predominant tool for securing the rights, the rate of return

under B-1 would be slightly less than that of Alternative B. The rate of return could be substantially less than Alternative B if the predominant tool for securing development and conservation rights is accomplished with permanent disposition.

- Alternative C – Focused Portfolio – Gross annual revenue under this alternative would be approximately \$6.4 – 7.8 million. Estimated average rates of return from Alternative C would be 5.48 – 6.27 percent. The latter higher rate of return would be achieved by funding improvements to enhance land entitlements.
- Alternative C-1 – Focused Portfolio – Conservation Priority – Gross revenue under this alternative would be slightly less than under Alternative C. Calculation of the rate of return for conservation emphasis depends on the method of disposition as per the logic discussed in B-1, above. In general, costs of Alternative C-1 remain fixed so if the income were reduced from the loss of residential revenue (9,467 acres less than Alternative C) then the rate of return would be correspondingly reduced.

4.2.3.3 Cumulative Effect

Increasing commercial, industrial and residential uses would create additional tax benefits to local communities and increase revenue to the schools of Montana under all alternatives.

4.2.3.4 Residual Adverse Effects

There would be no residual adverse effects from increased revenue to the Trusts under any of the alternatives.

4.2.3.5 Irretrievable and Irreversible Commitment of Resources

There would be no irretrievable and irreversible effects under any of the alternatives.

4.2.3.6 Short Term versus Long Term Productivity

Increased revenue would be from annual lease payments and interest from the permanent fund. Revenue objectives are intended to promote the long-term interests of the various Trusts through a combination of income strategies and general portfolio management within all the bureaus of the TLMD. All permanent dispositions of land are subject to a project level MEPA analysis that would help evaluate short versus long-term “productivity”.

4.2.4 Real Estate Transactions and Authorizations

4.2.4.1 Statewide Overview

Under 77-1-204, MCA the state can sell, participate in land banking, purchase, lease or exchange Trust Lands when, in the State Board of Land Commissioner’s judgment, it is advantageous to do so. These transactions and authorizations are detailed in Chapter 3, Section 3.2.4.

4.2.4.2 Direct and Indirect Impacts

- Alternative A – Current Program
 - Industrial and Commercial Uses – Under Alternative A, commercial and industrial development would generally not make use of the REMB land banking program. Land exchanges would occur primarily in response to inquiries. However, if the staff is able to identify a clear advantage in pursuing a land exchange, the Bureau may initiate a transaction as resources allow. In most cases the REMB would lease rather than sell land associated with industrial and commercial developments.
 - Residential Uses – Under Alternative A, residential development would generally not make use of the REMB land banking program. Land exchanges would occur primarily in response to inquiries. However, if the staff is able to identify a clear advantage in pursuing a land exchange, the Bureau may initiate a transaction as resources allow. Land sales would not be a high priority. However, objectives related to new residential opportunities would mostly be achieved through “sale” as opposed to leasing.
 - Conservation Uses – Under Alternative A, conservation uses would be achieved primarily through conservation leases, licenses, and easements or through the lease, license, or sale of development rights if properly authorized by legislation.
- Alternatives B – Diversified Portfolio and Alternative B-1 – Conservation Priority
 - Industrial and Commercial Uses – Under Alternative B, the REMB would use land exchanges on a limited basis to acquire lands with higher commercial and industrial revenue generating potential. In addition, the Bureau would also, to some extent, use land banking to acquire lands that are well positioned to take advantage of future revenue generation and lands that have an existing revenue stream (existing revenue producing activities on the land). These might include active commercial and industrial enterprises.

Under Alternative B, the REMB would respond to inquiries related to land exchanges. In addition, the Bureau would seek land exchange opportunities that would result in better present and future income. The REMB would also consider land exchanges that would result in a mixed acquisition wherein equal acres would be achieved in addition to other property that would have immediate income potential.

- Residential Uses – Under Alternative B, land sales and land banking would be the primary tool to achieve the residential objectives. For example, if 40 acres of Trust Lands are sold at residential land

values, then that 40 acres would be credited towards the share of residential growth on Trust Lands.

- Conservation Uses – Under Alternatives B and B-1, conservation uses would be achieved primarily through conservation leases, licenses, and easements or through the lease, license, or sale of development rights if properly authorized by legislation.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – The REMB would use Land Banking to capture existing properties with high revenue streams. The Bureau would also use Land Banking to position itself in areas of high growth so that it can easily respond to opportunities in the market to maximize its revenue. The REMB would consider those land exchanges that would result in the acquisition of both undeveloped land and land with improvements that provide an existing income stream.
 - Residential Uses – Most of the residential objectives for new residential growth would be accomplished through land sales. Land sales under Alternative C would be considered in conjunction with joint ventures and partnerships between the REMB and private and/or public entities. Under this approach, the joint venture/partnerships would make physical improvements to the land and seek those land use designations that would improve overall marketability. Once the maximum entitlements are achieved, the land would be sold and the partners would share in the profits associated with the improvements.
 - Conservation Uses – Under Alternatives C and C-1, conservation uses would be achieved primarily through conservation leases, licenses, and easements or through the lease, license, or sale of development rights if properly authorized by legislation.

4.2.4.3 Cumulative Effects

Under all alternatives, land transactions would be used to increase revenue potential and/or to position Trust Lands to take advantage of opportunities in the residential, industrial and commercial sectors. The exchange, sale and banking of lands will, over time, provide the TLMD with better asset base.

4.2.4.4 Residual Adverse Effects

Montana statutes governing land sales, exchanges and land banking require that the transactions produce a result that is equal to or exceeds the pre-transaction condition. No residual adverse effects are expected to occur as a result of these activities.

4.2.4.5 Irretrievable and Irreversible Commitments of Resources

Sales or exchanges of land are irretrievable and irreversible in most cases. The REMB will consider each land transaction on a project level basis using a MEPA analysis to carefully assure that land transactions meet the mission of the TLMD – to provide revenue to the Trust and to protect the long term revenue capacity of the land.

4.2.4.6 Short Term versus Long Term Productivity

Under all alternatives, the REMB would evaluate the entire land base of Trust Lands and would utilize those land transactions that serve the long-term interests of the Trusts. The REMB is only one Bureau with revenue-generating objectives for the trust. A highest and best use analysis would determine project level opportunities for the REMB.

4.2.5 Geology and Soil

4.2.5.1 Statewide Overview

Geological resources would not be affected by the Alternatives being evaluated in this Programmatic EIS and therefore, geological resources are not evaluated further in this section. Soil resources on Trust Lands vary according to setting and parent material. Potential impacts from implementation of the Alternatives to soil resources would be similar for all land office geographic areas.

Descriptions of existing geological and soil resources on Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.5.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on soil resources.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of the current land use on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses. Potential effects on the soil resource include compaction, stockpiling (loss of biological activity, reduction in soil fertility), and soil loss due to handling and soil salvage. Depending on the vegetative condition, existing erosion, or general soil condition on specific lands, conversion to industrial and/or commercial uses may or may not result in an increase in sediment and soil loss during construction activity and subsequent operations of facilities. For lands where soil compaction, loss, and reduction in fertility or sediment contribution to waterways is occurring, conversion of use to industrial and/or commercial could result in a reduction in sediment loss as a consequence of paving or covering

disturbance areas. For other lands, conversion could result in construction activities that would increase land disturbance on a specific tract, thereby increasing exposure of bare-mineral soil to wind and water erosion.

Commercial and industrial development would likely occur within locally zoned areas where specific sediment control, best management practices, and construction management controls must be complied with by the developer. Short-term soil losses would occur during construction. However, compliance with local zoning requirements would reduce losses to permissible levels.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to Residential uses. Developers of specific lands would be required to comply with applicable regulations and requirements pertaining to control of sediment and soil loss during construction of residential properties.
- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an increase in the number of acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to soil resources would be similar to those described under Alternative A.
 - Residential Uses – Alternatives B and B-1 would result in an increase in the number of acres converted to Residential use under the REMB Leasing program as compared to Alternative A. (Under B-1, the number of acres converted to residential use could be reduced by as much as half of the projected amount.) Impacts to Trust Land as a result of conversion to Residential under this alternative would be similar to impacts described under Alternative A.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in an increase in the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives A, B and B-1. Potential impacts to soil resources would be similar to those described under Alternatives A, B and B-1.
 - Residential Uses – Alternatives C and C-1 would result in an increase in the number of acres converted to Residential use under

the REMB Leasing program as compared to Alternatives A, B and B-1. (Under C-1, the number of acres converted to residential use could be reduced by as much as half of the projected amount.) Impacts to Trust Land as a result of conversion to Residential under this alternative would be similar to impacts described under Alternatives A, B and B-1.

4.2.5.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to soil resources for any of the REMB Lease designated land uses described above. The Alternatives would not create a demand for conversion of current land use to commercial, industrial, conservation or residential uses. Rather, the program alternatives analyzed in the PEIS would allow the REMB to participate in the existing growth market in the state.

4.2.5.4 Residual Adverse Effects

No residual adverse effects to soil resources are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with local zoning and subdivision laws and state and federal laws for controlling soil loss and sedimentation of waterways would reduce impacts to permissible levels.

4.2.5.5 Irretrievable and Irreversible Commitment of Resources

Implementation of any of the Alternatives would not result in an irreversible or irretrievable commitment of soil resources. Compliance with local, state, and federal requirements would limit soil losses associated with the REMB Leasing program.

4.2.5.6 Short Term versus Long Term Productivity

Short-term impacts to the soil resource include impacts described above. These short-term impacts to soil are not expected to impact long-term productivity of the soil resource on Trust Lands included in the program.

4.2.6 Water Resources

4.2.6.1 Statewide Overview

Surface water resources in Montana range from streams originating in the mountains in western Montana to lakes and rivers flowing westward and eastward from the Continental Divide. Water quality varies depending on geology, water use, and treatment efficacy. Headwater systems in the mountains of the state generally exhibit high quality water. As water flows into larger rivers and lake systems, the water quality changes in response to increases in dissolved solids as a result of water use and return flow to river systems.

Groundwater quantity and quality varies across the state as a function of geologic setting, groundwater withdrawal, water use, and infiltration and recharge to aquifer systems. Groundwater is generally considered to be of high quality in the mountainous areas of the state where recharge is from precipitation and high quality surface water systems. Groundwater in some areas of the state reflects the geologic setting and can contain elevated levels of dissolved solids and trace elements.

Descriptions of existing water resources in Montana and on Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.6.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on water resources.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of the current land use on selected Trust Land lands (agriculture, grazing, or timber) to industrial and/or commercial uses. Potential effects on water resources from conversion to commercial and industrial land uses include changes in water quality as result of increased runoff (i.e., increase dissolved solids concentration from exposure to parking lots or paved areas), diversion of surface water flow, increase in concentration of suspended sediment (i.e., during construction periods), reduced recharge to groundwater, changes to groundwater quality from infiltration systems (i.e., sites where municipal stormwater systems are not available), and an increase in volume of water reporting to municipal or local water treatment systems.

Industrial and commercial activities would require that additional water supply be provided to meet the demand for water associated with these activities. Increases in acreage converted to these uses could affect capacities of current water supply systems, sewage treatment systems, and stormwater handling systems for municipalities.

Depending on vegetative condition, existing erosion, and general soil condition on specific lands, conversion to industrial and/or commercial uses may or may not result in an increase in sediment and soil loss during construction activity and subsequent operations of facilities. For lands where soil compaction, loss, and reduction in fertility or sediment contribution to waterways is occurring, conversion of use to industrial and/or commercial could result in a reduction in sediment loss as a consequence of paving or covering disturbance areas. For other lands, conversion could result in construction activities that would increase land disturbance on the specific tract, thereby increasing exposure of bare-mineral soil to wind and water erosion.

Commercial and industrial development of these lands would likely occur within locally zoned areas where specific sediment control, best management practices, and construction management controls must be complied with by the developer. Short-term impacts to

water quality could occur during construction; however, compliance with stormwater regulations and state water quality standards would reduce impacts to permissible levels.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. Potential effects to water resources from residential development include changes in surface water flow; changes in groundwater quality from septic systems (i.e., increased nitrate concentration) where municipal sewage treatment is not available; increase in withdrawal of groundwater for domestic use possibly resulting in lowering water tables locally (in locations where a municipal water source is not available); increase in suspended sediment in surface water (unpaved roads and during construction activities); and an increase in surface water runoff from roads and developed areas.

Developers of residential properties are required to comply with applicable regulations and requirements pertaining to properly site and design septic systems to meet state requirements or to connect to public facilities.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in doubling the number of acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to water resources would be similar to those described under Alternative A.
 - Residential Uses – Alternative B would result in doubling the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative A. Under Alternative B-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts to water resources on Trust Land as a result of conversion to Residential under this alternative would be similar to impacts described under Alternative A.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in doubling the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives B and B-1. Potential impacts to water resources would be similar to those described under Alternative A.

- o Residential Uses – Alternative C would result in doubling the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternative B. Under Alternative C-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts to water resources on Trust Land as a result of conversion to Residential under this alternative would be similar to impacts described under Alternative A.

4.2.6.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to water resources for any of the designated land uses described above. Continuation of the Current Program (Alternative A) or implementation of any of the action Alternatives would not create additional demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the PEIS would allow Montana's Trust Lands to participate in the existing growth market in the state.

4.2.6.4 Residual Adverse Effects

No residual adverse effects to water resources are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with local zoning and subdivision and state and federal laws for controlling soil loss and sedimentation of waterways would reduce impacts to water resources to permissible levels. Compliance with water quality standards associated with commercial, industrial, and residential use of land would result in activities meeting applicable effluent limitations.

4.2.6.5 Irretrievable and Irreversible Commitments of Resources

Implementation of the Proposed Action and alternatives would not result in an irreversible or irretrievable commitment of water resources. Compliance with local, state, and federal requirements would limit water impacts associated with the REMB program.

4.2.6.6 Short Term versus Long Term Productivity

Short-term impacts to water resource include impacts described above. These short-term impacts to water resources are not expected to impact long-term productivity of the water resources on Trust Lands included in the program.

4.2.7 Fisheries

4.2.7.1 Statewide Overview

Fisheries on Trust Lands vary according to quantity and quality of water resources available to a particular species. Cold-water fisheries are dominant in the Northwest, Southwest, and Central Land Office areas; warm water fisheries are primarily found in the Northeast, East, and South Land Office areas. Potential impacts from implementation of any of the Alternatives to fisheries resources would likely result from increased sediment contribution to surface water from activity on selected lands. Potential effects of this sediment load are expected to be greater in the

Northwest, Southwest, and Central Land Offices than in the Northeast, East, and South Land Office areas since these areas have a higher percentage of developable land in proximity surface water. In addition, cold water fisheries are also less tolerant to sediment load increases than warm water species.

Special status fish species including bull trout, Yellowstone and westslope cutthroat trout, arctic grayling, and white sturgeon occur in the Northwest, Southwest, and Central Land Office areas. Potential sediment load increases resulting from development in these areas could have impacts to these species. Pallid sturgeon are found in the Missouri River and larger tributaries of the Northeast and East Land Office areas, which have fewer developable lands and therefore would likely experience less development activity (sediment loading) affecting this species.

Descriptions of existing fisheries resources on Montana and Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.7.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on fisheries resources.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of current land uses on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses. Potential effects on fisheries resources include a threat to spawning from increased sediment and contaminant loads and increased nutrients and reduced oxygen levels in surface water. Contaminant loading could increase potential for analyte concentrations to exceed water quality standards.

Depending on the vegetative or general surface condition on specific lands, conversion to industrial and/or commercial uses may or may not result in an increase in sediment load to surface water during construction activity and subsequent operations of facilities. For lands where sediment contribution to surface waterways is occurring, conversion to industrial and/or commercial use could result in a reduction in sediment load as a consequence of paving or covering disturbance areas. Conversely, storm water runoff from engineered landscapes, and areas covered with asphalt or concrete paving could increase concentrations of contaminants from oil and grease, antifreeze, and fertilizers. Potential impacts to fisheries resources could also occur from increased sediment, nutrients, fertilizers, and other contaminants in return flow from irrigated crops and runoff from feedlots.

Where commercial and industrial development occurs within the jurisdiction of local municipalities, specific best management practices for construction management, sediment, and storm water runoff controls would be required of a developer. Runoff from the tract would report to storm water treatment facilities and as such, would be treated to meet effluent standards. In locations where storm water treatment is not available, infiltration into subsurface would reduce sediment loading to surface water. Short-term sediment losses would occur during construction; however, compliance with local zoning requirements would reduce losses to permissible levels.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. Potential effects to fisheries from residential development include changes in surface water flow; increase in suspended sediment in surface water (unpaved roads and construction activities); and an increase in surface water runoff from roads and developed areas.

Developers of residential lands would be required to comply with applicable regulations and requirements pertaining to control of sediment, storm water runoff control during construction of residential properties, and use of best management practices.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an increase in acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to fisheries would be similar to those described under Alternative A.
 - Residential Uses – Alternatives B and B-1 would result in an increase in the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative A. Alternative B-1 would reduce the number of acres converted to residential use by up to one half. Impacts to fisheries resources as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A. However, increased sediment and soil loss could result from development of residential properties at levels associated with Alternative B as compared to Alternatives B-1 or A.
- Alternative C – Focused Portfolio
 - Industrial and Commercial Uses – Implementation of Alternative C would result in an increase in the number of acres of Trust Land

that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives B and B-1. Potential impacts to fisheries would be similar to those described under Alternative A.

- Residential Uses – Alternatives C would result in an increase in the number of acres converted to residential use under the Real Estate Management Program as compared to Alternatives A, B and B-1. (Under Alternative C-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount.) Impacts to fisheries as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A.

4.2.7.3 Cumulative Impacts

Assuming that development is conducted in accordance with applicable storm water regulations and Best Management Practices are implemented to control sediment loss, implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to fisheries resources for any of the Real Estate Management Program designated land uses described above. None of the Alternatives would create a demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the Programmatic EIS would allow Montana to participate in the existing real estate growth market in the state.

4.2.7.4 Residual Adverse Impacts

No residual adverse effects to fisheries are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with local zoning and subdivision laws and state and federal laws for controlling sedimentation and contamination of waterways and storm water runoff would reduce impacts to meet applicable standards that protect fish and aquatic resources.

4.2.7.5 Irretrievable and Irreversible Commitment of Resources

Implementation of any of the Alternatives would not result in an irreversible or irretrievable commitment of fisheries resources. Compliance with local, state, and federal requirements would limit impacts to fisheries associated with the Real Estate Management Program.

4.2.7.63 Short Term versus Long Term Productivity

Short-term impacts to the fisheries resource include impacts described above. These short-term impacts to fish are not expected to impact long-term productivity of fisheries resources on Trust Lands included in the program.

4.2.8 Wildlife

4.2.8.1 Statewide Overview

Over 650 vertebrate wildlife and 390 bird species have been recorded in Montana. Wildlife occurring on Trust Lands vary according to density and type of vegetation,

quantity and quality of water, climatic, and geomorphic conditions. Each Land Office area supports diverse populations of game animals, furbearers, rodents, upland game birds, raptors, waterfowl, and migratory birds. The Montana Natural Heritage Program lists 161 species of special concern including federally listed threatened and endangered species. Each Land Office area is home to various numbers of special status species.

Potential impacts from implementation of the any of the Alternatives to wildlife resources could include displacement of individuals to adjoining undeveloped areas; loss of certain individuals; increase in urban/suburban wildlife populations; increased wildlife/human interaction; direct loss of wildlife habitat due to land disturbance/construction activity; elimination of cover (nesting, hiding, thermal), breeding sites and forage; and a potential increase in wildlife mortality due to vehicle and powerline (birds) collisions.

Potential land development under all alternatives is projected to affect more land in western Montana (Northwest, Southwest, and Central Land Office areas [30,524 acres total]) than eastern Montana (Northeast, East, and South Land Office areas [3,747 acres total]). Potential impacts to wildlife and two endangered species (grizzly bear and gray wolf) occurring in western Montana Land Office areas would be mitigated by the greater amount of federal land available to provide respective species habitat that cannot be developed. Federal land in western Montana Land Office areas totals approximately 17.8 million acres versus 9.3 million acres in eastern Montana Land Office areas.

Descriptions of existing wildlife resources on Montana and Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.8.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on fisheries resources.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of current land uses on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses.

Potential effects on wildlife resources include displacement to adjoining undeveloped lands; loss of certain individuals; increase in urban/suburban wildlife populations and increased wildlife/human interaction; direct loss of wildlife habitat due to land disturbance/construction activity could eliminate cover (nesting, hiding, thermal), breeding sites and forage; and potential increase in wildlife mortality due to vehicle and power line (birds) collisions.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to Residential uses. Potential effects to wildlife from residential development would be similar to those described for commercial/industrial use. However, residential development would likely occur on the urban fringe where some wildlife species (deer, bears, and mountain lions) are becoming habituated to human activity and would continue to inhabit suburban residential areas.

Developers of residential lands would be required to comply with applicable regulations and requirements pertaining to special status species prior to development of residential properties.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an increase in the number of acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to wildlife from implementation of Alternatives B and B-1 would be similar to those described under Alternative A.
 - Residential Uses – Alternatives B and B-1 would result in an increase in the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternative A. Alternative B-1 would reduce the number of acres placed in residential use by up to one half. Impacts to wildlife resources as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A. However, the increased number of residential areas would increase the amount of urban-wildland interface. Increased amount of urban fringe development would likely increase the number of encounters between humans and wildlife.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in an increase in the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives B and B-1. Potential impacts to wildlife resources would be similar to those described under Alternative A.
 - Residential Uses – Alternatives C and C-1 would result in an increase in the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternatives A, B and B-1. Alternative C-1 would reduce the number of acres

placed in residential use by up to one half. Impacts to wildlife resources as a result of conversion to residential use under this alternative would be a function of the increased number of acres of urban-wildland interface that would result. Any increase in the urban-wildland areas could increase the contact between humans and wildlife. Potential impacts to wildlife resources would be similar to those described under Alternative A.

4.2.8.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to wildlife resources for any of the Real Estate Management Program designated land uses described above. The Alternatives would not create a demand for conversion of current land use to commercial, industrial, or residential uses; rather, the program alternatives analyzed in the PEIS would allow the REMB to participate in the existing real estate growth market in the state.

To the extent that eligible Trust Lands are located in areas where wildlife use is high, conversion of these lands may result in creating an additive impact associated with human-wildlife contacts.

4.2.8.4 Residual Adverse Effects

No residual adverse effects to wildlife are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with state and federal laws concerning special status species would reduce impacts to permissible levels.

4.2.8.5 Irretrievable and Irreversible Commitments of Resources

Implementation of any of the Alternatives would not result in an irreversible or irretrievable commitment of wildlife resources. Compliance with state and federal requirements would limit impacts to special status species associated with the Real Estate Management Program.

4.2.8.6 Short Term versus Long Term Productivity

Short-term impacts to wildlife resources include impacts described under Alternative A above. These short-term impacts to wildlife are not expected to impact long-term productivity of wildlife resources on Trust Lands included in the program.

4.2.9 Reptiles and Amphibians

4.2.9.1 Statewide Overview

The Montana Natural Heritage Program lists 16 species of amphibians and 17 species of reptiles that occur in Montana. Amphibians and reptiles do not produce enough metabolic heat to maintain body temperature higher than their environment ("cold-blooded"). Their dependence on the temperature of the environment prevents them from using some habitats and necessitates hibernation through winter months.

Amphibians are usually associated with moist habitats (wetlands), many are aquatic or semi-aquatic, and all breed in water. Amphibians are common and widely distributed across Montana. There are five amphibian species of concern of which, some or all occur in each land office area.

Reptiles include turtles, snakes, and lizards. Reptiles are widely distributed and occur in nearly all habitat types across Montana. The Montana Natural Heritage Program lists two turtles, three lizards, and four snakes as species of special concern of which, some or all occur in each land office area.

Potential impacts from implementation of any of the Alternatives to amphibians and reptiles include displacement to adjoining undeveloped areas; loss of certain individuals; and direct loss of suitable habitat due to land disturbance/construction activity that eliminates cover, breeding areas, and forage. Potential impacts to amphibians and reptiles are not distinguishable by geographic land office area.

Descriptions of existing amphibians and reptiles on Montana and Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.9.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on reptiles and amphibians.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of current land uses on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses.

Amphibian and reptile species with low mobility would likely die during initial land disturbance activities (construction). Species with greater mobility would be displaced to adjacent habitat, if available. Some species may reestablish on the tract after habitat is restored or suitable habitat created.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to Residential uses. Potential effects to amphibians and reptiles from residential development would be similar to those described for commercial/industrial use. Developers of residential lands would be required to comply with applicable regulations and requirements pertaining to species of special concern prior to development of residential properties.
- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority

- Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an increase in the number of acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to amphibians and reptiles would be similar to those described under Alternative A.
- Residential Uses – Alternatives B and B-1 would result in an increase in the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternative A. Alternative B-1 could reduce the number of residential acres developed by as much as one half. For those species that are sufficiently mobile, movement to adjacent undeveloped land would reduce impacts associated with increased residential development. Impacts to amphibians and reptiles as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternative C and C-1 would result in an increase in the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternative B. Potential impacts to amphibians and reptiles would be similar to those described under Alternative A.
 - Residential Uses – Alternatives C and C-1 would result in an increase in the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternative B. For those species that are able to move to adjacent, undeveloped areas, potential impacts would be minimal. Impacts to amphibians and reptiles as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A.

4.2.9.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to amphibians and reptiles for any of the Real Estate Management Program designated land uses described above. The Alternatives would not create a demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the PEIS would allow the REMB to participate in the existing real estate growth market in the state.

4.2.9.4 Residual Adverse Effects

No residual adverse effects to amphibians and reptiles are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with

state and federal laws concerning species of special concern would reduce impacts to permissible levels.

4.2.9.5 Irretrievable and Irreversible Commitment of Resources

Implementation of the any of the Alternatives would not result in an irreversible or irretrievable commitment of amphibians and reptiles. Compliance with state and federal requirements would limit impacts to species of special concern associated with the Real Estate Management Program.

4.2.9.6 Short Term versus Long Term Productivity

Short-term impacts to amphibians and reptiles include impacts described above. These short-term impacts to amphibians and reptiles are not expected to impact long-term productivity of amphibians and reptiles on Trust Lands included in the program.

4.2.10 Vegetation

4.2.10.1 Statewide Overview

Vegetation communities in Montana are diverse due to the range of climatic conditions, geology, and topographic settings. These communities range from spruce-fir and cedar-hemlock forests in the Northwest Land Office to grasslands and juniper woodland in the Southeast Land Office. Private and Trust Land that can support agricultural and grazing practices has been converted from its natural state to enable these activities to occur. Other areas have been set-aside in their natural state as wilderness areas or parklands.

Noxious weeds are present in all counties in Montana. The estimated weed infestation rate in Montana is 9 percent per year.

No endangered plant species are known to occur in Montana; however, two threatened species occur in the state and on Trust Land in the Northwest Land Office and in the Southwest and Central Land Office areas. Each land office area contains rare plant species unique to that region and some species occupy more than one region.

Descriptions of vegetation resources in Montana and on Trust Land are included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.10.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on vegetation.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of the current land use on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or

commercial uses. Potential effects on vegetation resources on Trust Lands from conversion to commercial and industrial land uses include:

- Removal of vegetative cover during construction activities
- Decrease in vegetative cover in areas where pavement or road building occurs
- Decrease in diversity in vegetation on lands where primary use was timber or grazing
- Change in species to engineered or designed landscape species.

Commercial and industrial development of these lands would likely occur within locally zoned areas where specific landscaping requirements apply. Developers are typically required to control noxious weeds within local zoning areas in Montana. Developers would also be required to avoid impacting threatened, endangered, and special status species.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. Trust Lands in the Northwest, Central, and Southwest Land Office areas most attractive for residential development are typically timbered lands. As such, conversion of timber lands to residential would likely result in a decrease in forest canopy and increase the amount of sunlight reaching the forest floor. This change could result in a change in snow depth, runoff characteristics, and understory growth locally. Increased emphasis on fire suppression on former timber lands converted to residential could result in reduction in the effects of fire on controlling forest health, understory growth, and fuel load. The potential to impact special status species would exist though mitigation and/or avoidance measures would be implemented to reduce or eliminate potential effects.

Depending on the status of weed infestation on Trust Lands selected for conversion to residential use, noxious weed infestations could increase in response to land disturbance, construction, and vehicle movement within specific lands. Use of noxious treatment methods to control or eradicate infestations would be the responsibility of individual homeowners within a tract unless organized weed control efforts are developed.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in doubling the number of acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to

Alternative A. Potential impacts to vegetation resources would be similar to those described under Alternative A.

- Residential Uses – Alternative B would result in doubling the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative A. Alternative B-1 would reduce the number of acres converted to residential use by up to one half. Impacts to vegetation resources on Trust Land as a result of conversion to residential under this alternative would be similar to impacts described under Alternative A.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in doubling the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives B and B-1. Potential impacts to vegetation resources would be similar to those described under Alternative A.
 - Residential Uses – Alternative C would result in doubling the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative B. Alternative C-1 would reduce the number of acres converted to residential use by up to one half. Impacts to vegetation resources on Trust Land as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A.

4.2.10.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to vegetation for any of the “other” designated land uses described above. Continuation of the Current Program (Alternative A) or implementation of any of the action Alternatives would not create additional demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the PEIS would allow the REMB to participate in the existing growth market in the state.

4.2.10.4 Residual Adverse Effects

No residual adverse effects to vegetation resources are anticipated to result from implementation of any of the alternatives evaluated in this Programmatic EIS.

4.2.10.5 Irretrievable and Irreversible Commitments of Resources

Implementation of the Proposed Action and alternatives would not result in an irreversible or irretrievable commitment of vegetation resources.

4.2.10.6 Short Term versus Long Term Productivity

Short-term impacts to vegetation include impacts described under Alternative A above. These impacts would impact vegetative productivity associated with the prior land use. Depending on the length of time that selected lands are used for

commercial, industrial, or residential uses, the potential for returning the land to productive vegetative use may be possible.

4.2.11 Air Quality

4.2.11.1 State Wide Overview

Potential effects on air quality in Montana are more dependent on the amount of growth and restrictions placed on that growth, rather than on the exact locations where the growth occurs. Air quality is a regional concept, and cannot be applied to individual land parcels that may or may not be converted from the current land use to industrial/commercial or residential use. The air quality of the future does not depend on whether Trust Land or adjacent lands are developed; it depends on the rules and regulations under which the development occurs.

Air quality in Montana cannot be deteriorated from the 1975/1988 baseline levels because the EPA has established Prevention of Significant Deterioration (PSD) increments that limit incremental degradation. Any new development must meet these Federal requirements, whether the development occurs on Trust Land or not.

Descriptions of existing air quality on and around Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.11.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would have no affect on air quality.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of the current land use on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses. Potential effects on air quality include increased emissions of criteria pollutants such as carbon monoxide, lead, sulfur compounds, nitrogen compounds, ozone, and particulate matter. Specific pollutants emitted depend on the nature of the industrial/commercial facility that is built. As all major new sources would be required to meet air quality standards, any proposed facility would be required to limit emissions to permissible levels. By law, industrial sources located within 100km of a Class I area are required to demonstrate compliance with Federal and State standards as described in Chapter 3. Traditionally, this radius is extended from 100km to 200km when doing Air Quality Related Value (AQRV) analyses to demonstrate compliance.

Increased emissions due to construction are expected. However, these emissions are generally much lower than those of the final

plant or facility, and are seldom enough to violate Federal or State standards.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. Increases in automobile-related emissions (e.g. carbon monoxide, nitrogen dioxide) and some increases in emissions of particulate matter due to residential wood smoke would result. If the concentration of new housing is high enough, and if the development occurs in areas where persistent inversion layers form (e.g. valleys), then particulate matter concentrations would increase. If that occurs, mechanisms would be employed by EPA to bring the State into air quality compliance.

Increased emissions due to construction of housing would be expected. However, these emissions would be short-lived and do not generally violate Federal or State standards.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an overall increase of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to air quality would be similar to those described under Alternative A, and would be subject to the same regulations and compliance demonstration requirements.

The amount of industrial/commercial development is unlikely to be affected by whether additional Trust Lands or adjacent non-Trust Lands are developed. Since emissions affect the air quality on a regional scale, only the amount of development affects air quality.

- Residential Uses – Alternatives B and B-1 would result in an increase in the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternative A. Alternative B-1 would reduce the number of residential acres by up to one half. Impacts to Trust Land as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A.

The amount of residential development is unlikely to be affected by whether additional Trust Land or adjacent non-Trust Land are developed. Since emissions affect the air quality on a regional scale, only the scale of development affects air quality.

- Alternatives C – Focused Portfolio and C-1 – Conservation Priority

- Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in an increase in the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to air quality would be similar to those described under Alternative A.

The amount of industrial/commercial development is unlikely to be affected by whether additional Trust Lands or adjacent non-Trust Lands are developed. Since emissions affect the air quality on a regional scale, only the amount of development affects air quality.

- Residential Uses – Alternatives C and C-1 would result in an increase in the number of acres converted to Residential use under the Real Estate Management Program as compared to Alternative A and B. Under Alternative C-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts to Trust Land as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A, B and B-1.

The amount of residential development is unlikely to be affected by whether additional Trust Land or adjacent non-Trust Land are developed. Since emissions affect the air quality on a regional scale, only the amount of development affects air quality.

4.2.11.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to degradation of air quality for any of the designated land uses described above. None of the Alternatives would create a demand for conversion of current land use to any of the designations described. Rather, the program alternatives analyzed in the PEIS would allow the REMB to participate in the existing real estate growth market in the state.

4.2.11.4 Residual Adverse Effects

No residual adverse effects to air quality are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with local, state, and federal laws for controlling new emission sources would reduce impacts to permissible levels.

4.2.11.5 Irretrievable and Irreversible Commitment of Resources

Implementation of the any of the Alternatives would not result in an irreversible or irretrievable commitment of air quality related resources. Compliance with local, state, and federal requirements would limit emissions associated with the Real Estate Management Program.

4.2.11.6 Short Term versus Long Term Productivity

Short-term impacts to air quality include impacts described above. These short-term impacts are not expected to impact the long-term air quality on or near Trust Lands included in the Real Estate Management Program.

4.2.12 Noise

4.2.12.1 Statewide Overview

Noise is identified, as “unwanted sound” that could result from change in use of Trust Lands from current activities to commercial, industrial, or residential uses. Noise emanating from Trust Land varies in accordance with the location of the tract, proximity of the receiver to the source (sensitive receptor), and the noise generating activity on or near a specific tract.

Descriptions of noise levels in Montana and on Trust Land is included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.12.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would not increase noise levels.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of the current land use on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses. Depending on the type of activity, conversion of land use to industrial or commercial use could result in a change in noise levels emanating from a particular tract of land. Where the industrial or commercial activity would occur inside a building, the noise levels affecting sensitive receptors might not change from levels associated with the prior land use. In other cases, the type of activity may result in an increase in noise levels over prior land uses.

Several Montana communities have adopted noise ordinances that apply to commercial and industrial sites within city limits. Compliance with noise ordinances would limit noise emissions from new sources.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. Most activity would occur in the western portion of Montana.

Noise sources associated with residential property typically include loud stereo or audio equipment, vehicles, and emergency response vehicles. Depending on the location of the selected trust tract,

conversion to residential use may or may not result in noticeable change in noise levels. For lands that are presently surrounded or are within existing residential areas, conversion of the trust tract would likely not result in noise levels in excess of adjacent areas.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in approximately twice the number of acres of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to sensitive receptors from noise levels associated with implementation of Alternatives B and B-1 would be similar to those described under Alternative A.
 - Residential Uses – Alternative B would result in doubling the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative A. Under Alternative B-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts from noise emissions associated with residential uses under this alternative would be similar to impacts described under Alternative A.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in doubling the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternative B. Potential impacts to sensitive receptors from noise levels associated with implementation of Alternative C would be similar to those described under Alternative A.
 - Residential Uses – Alternative C would result in doubling the number of acres of eligible Trust Land converted to residential use under the Real Estate Management Program as compared to Alternative B. Under Alternative C-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts from noise emissions associated with residential uses under this alternative would be similar to impacts described under Alternatives A, B and B-1.

4.2.12.3 Cumulative Effects

Implementation of any of the Alternatives would not result in an increased or additive impact (cumulative impact) to sensitive receptors as a result of changes in noise levels associated with designated land uses described above. Continuation of the Current Program (Alternative A) or implementation of the action Alternatives

would not create additional demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the PEIS would allow The REMB to participate in the existing real estate growth market in the state.

4.2.12.4 Residual Adverse Effects

No residual adverse effects from noise levels are anticipated to result from implementation of any of the alternatives evaluated in this P EIS. Compliance with local zoning and subdivision regulations for controlling noise levels would result in activities on Trust Land being compatible with surrounding areas.

4.2.12.5 Irretrievable and Irreversible Commitments of Resources

Not applicable

4.2.12.6 Short Term versus Long Term Productivity

Not applicable

4.2.13 Aesthetics

4.2.13.1 Statewide Overview

Montana's landscape is comprised of diverse topography including the Rocky Mountains in the western one-third of the state and the Great Plains in the eastern two-thirds of the state broken by various island mountain ranges and badlands. The variety of landscapes across the state results in widely differing aesthetics to the viewer.

Descriptions of aesthetic resources in Montana and Trust Land are included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.13.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would not impact aesthetic resources.

- Alternative A – Current Program
 - Commercial and Industrial Uses – Implementation of Alternative A would result in conversion of current land uses on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses.

Because most of the projected use of Trust Land for commercial and industrial uses is expected to occur within urban areas, the potential effects on aesthetic resources would be limited. Existing infrastructure of municipalities has modified the landscape and established an urban – suburban visual characteristic. Addition of commercial or industrial facilities to the existing setting would not result in modifications to the natural landscape.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. Potential effects on aesthetic resources from residential development include increased urban sprawl comprised of housing, roads, and utility corridors. These landscape modifications would include changes in form, color, texture, and line of the natural landscape. In some circumstances, development of Trust Lands may avoid situations where development would occur around or bi-passing the trust tract; thereby increasing sprawl.

Developers of residential lands may be required to design subdivisions or housing development with the natural landscape receiving consideration. Retaining the natural landscape as much as practicable would reduce impacts to aesthetic resources.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an increase of Trust Land that would be reclassified from current land use and converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to aesthetic resources would be similar to those described under Alternative A.
 - Residential Uses – Alternative B would result in an increase in the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative A. Under Alternative B-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts to aesthetic resources as a result of conversion to residential use under this alternative would be similar to impacts described under Alternative A. However, increased acreage conversion to residential in certain areas could result in greater modification to the landscape as compared to Alternative A.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in an increase in the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives B and B-1. Potential impacts to aesthetic resources would be similar to those described under Alternative A because development would largely occur within areas where the landscape has already been modified by urban development.
 - Residential Uses – Alternatives C and C-1 would result in an increase in the number of acres converted to residential use under

the Real Estate Management Program as compared to Alternatives B and B-1. Under Alternative C-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Impacts to aesthetic resources as a result of conversion to residential use under this alternative would be similar to impacts described under Alternatives B and B-1. However, increased acreage conversion to residential in certain areas could result in greater modification to the landscape as compared to Alternative A.

4.2.13.3 Cumulative Effects

Commercial and industrial development is expected to occur primarily within urban areas where municipal infrastructure has already modified the natural landscape; therefore, addition of commercial and industrial development on Trust Lands is not expected to add measurably to existing landscape characteristics. Development of residential uses on Trust Lands may add to the visual changes evolving from urban – suburban sprawl ongoing in many areas of the state. None of the Alternatives would create a demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the PEIS would allow The REMB to participate in the existing real estate growth market in the state.

4.2.13.4 Residual Adverse Effects

Residual adverse effects on aesthetic resources are anticipated to result from implementation of any of the Alternatives evaluated in this PEIS. Compliance with local zoning and subdivision regulations (where applicable) and incorporation of natural landscape retention in residential development design would reduce residual effects from development.

4.2.13.5 Irretrievable and Irreversible Commitments of Resources

Implementation of any of the Alternatives would not result in an irreversible or irretrievable commitment of aesthetic resources.

4.2.13.6 Short Term versus Long Term Productivity

Short-term impacts to aesthetic resources include impacts described above. Long-term productivity of the landscape, although modified by development, would not be affected.

4.2.14 Cultural Resources

4.2.14.1 Statewide Overview

Cultural and/or paleontologic resources exist on many Trust Lands throughout Montana. Potential impacts to these resources are not distinguishable by geographic land office area. State agencies are responsible for stewardship of significant historic and prehistoric resources on state-owned land in accordance with the Montana State Antiquities Act (§ 22-3-421—22-3-442, MCA). Stewardship requires systematic identification and evaluation of sites, buildings, and districts (groups of related buildings or sites) within a potential impact area, and considering the possibility and feasibility of preserving, avoiding, and/or mitigating potential adverse effects to

those sites or resources. Under all alternatives, information would be gathered by qualified persons regarding the presence of cultural and paleontologic resources as Trust Lands are developed as part of the current Real Estate Management Program for commercial, industrial, or residential lands.

General descriptions of cultural resources in Montana are included in Chapter 3 – Affected Environment. Descriptions of the Alternatives are included in Chapter 2.

4.2.14.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would not impact aesthetic resources.

- Alternative A – Current Program
 - Industrial and Commercial Uses – Implementation of Alternative A would result in conversion of current land uses on selected Trust Lands (agriculture, grazing, or timber) to industrial and/or commercial uses. The estimated number of acres to be converted to industrial and/or commercial use under Alternative A ranges from 52 in the Eastern Land Office area to 809 in the Central Land Office area.

Qualified DNRC personnel will conduct cultural/paleontologic resource surveys of Trust Lands selected for commercial and/or industrial development in accordance with the Montana State Antiquities Act prior to any groundbreaking activities. These surveys are required to identify cultural and paleontologic resources within a proposed project area, and to gather sufficient data to generate informed recommendations directed toward limiting, avoiding, or otherwise mitigating impacts to state owned Heritage Properties and scientifically significant paleontologic resources.

- Residential Uses – Continuation of the current Real Estate Management Program would result in conversion of selected Trust Lands to residential uses. The estimated number of acres to be converted to residential use under Alternative A ranges from 21 in the Eastern Land Office to 2,705 in the Northwest Land Office.

In some circumstances, development of Trust Lands where cultural or paleontologic resources have not been identified may avoid situations where development would otherwise occur outside Trust Lands where cultural/paleontologic resource surveys are not required.

- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives B and B-1 would result in an increase in the number of acres of Trust Land that would be reclassified from current land use and

converted to industrial and/or commercial uses as compared to Alternative A. Potential impacts to cultural and paleontologic resources will be similar under all Alternatives. However, the Montana State Antiquities Act directs state land managing agencies to consider the consequences of proposed impacts to cultural and paleontologic resources through a three step process. The first step is on the ground identification of cultural and paleontologic resources in a project area. The second step is to evaluate the historical, cultural and scientific significance of those resources following a standardized set of criteria. The third step is to consider the feasibility of designing steps to limit, avoid, or otherwise mitigate impacts to those state owned resources determined to be historically, culturally, or scientifically significant cultural resources (Heritage Properties), or scientifically significant paleontologic resources.

- Residential Uses – Alternatives B and B-1 would result in an increase in the number of acres converted to residential use under the Real Estate Management Program as compared to Alternative A. Under Alternative B-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Potential impacts to cultural and paleontologic resources will be similar under all Alternatives, however, the Montana State Antiquities Act directs state land managing agencies to consider the consequences of proposed impacts to cultural and paleontologic resources through a three step process. The first step is on the ground identification of cultural and paleontologic resources in a project area. The second step is to evaluate the historical, cultural and scientific significance of those resources following a standardized set of criteria. The third step is to consider the feasibility of designing steps to limit, avoid, or otherwise mitigate impacts to those state owned resources determined to be historically, culturally, or scientifically significant cultural resources (Heritage Properties), or scientifically significant paleontologic resources.
- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Implementation of Alternatives C and C-1 would result in an increase in the number of acres of Trust Land that would be modified from current land use and converted to industrial and/or commercial uses as compared to Alternatives B and B-1. Development under Alternative C over Alternatives B and B-1 by land office area is generally by a factor of two. Potential impacts to cultural and paleontologic resources will be similar under all Alternatives, however, the Montana State Antiquities Act directs state land managing agencies to consider the consequences of proposed impacts to cultural and paleontologic

resources through a three step process. The first step is on the ground identification of cultural and paleontologic resources in a project area. The second step is to evaluate the historical, cultural and scientific significance of those resources following a standardized set of criteria. The third step is to consider the feasibility of designing steps to limit, avoid, or otherwise mitigate impacts to those state owned resources determined to be historically, culturally, or scientifically significant cultural resources (Heritage Properties), or scientifically significant paleontologic resources.

- Residential Uses – Alternatives C and C-1 would result in an increase in the number of acres converted to residential use under the Real Estate Management Program as compared to Alternatives B and B-1. Under Alternative C-1 the number of acres converted to residential use could be reduced by as much as half of the projected amount. Conversion to residential use would range from 38 acres in the Eastern Land Office area to 5,410 acres in the Northwest Land Office area under Alternative C. Eastern Montana Land Office areas would see a combined total of 812 acres of conversion versus 11,143 acres in the western area. Reclassification of 11,143 acres to residential use in the western Montana Land Office areas would represent 0.9 percent of the total developable Trust Lands in those Land Office areas. Potential impacts to cultural and paleontologic resources will be similar under all Alternatives, however, the Montana State Antiquities Act directs state land managing agencies to consider the consequences of proposed impacts to cultural and paleontologic resources through a three step process. The first step is on the ground identification of cultural and paleontologic resources in a project area. The second step is to evaluate the historical, cultural and scientific significance of those resources following a standardized set of criteria. The third step is to consider the feasibility of designing steps to limit, avoid, or otherwise mitigate impacts to those state owned resources determined to be historically, culturally, or scientifically significant cultural resources (Heritage Properties), or scientifically significant paleontologic resources.

4.2.14.3 Cumulative Effects

Commercial and industrial development is expected to occur within urban areas where municipal infrastructure has already modified the natural landscape; therefore, addition of commercial and industrial development on Trust Lands is not expected to measurably increase impacts to cultural or paleontologic resources. Development of residential uses on Trust Lands may increase potential impacts to cultural and paleontologic resources on previously undisturbed land. However, required cultural and paleontologic resource surveys are required to identify cultural and paleontologic resources within a proposed project area, and to gather sufficient data to generate

informed recommendations directed toward limiting, avoiding, or otherwise mitigating impacts to state owned Heritage Properties and scientifically significant paleontologic resources. Because of the nonrenewable nature of cultural and paleontologic resources, most disruptive impacts will be permanent and irreversible.

None of the Alternatives would create a demand for conversion of current land use to commercial, industrial, or residential uses. Rather, the program alternatives analyzed in the Programmatic EIS would allow the REMB to participate in the existing real estate growth market in the state.

4.2.14.4 Residual Adverse Effects

Because of the nonrenewable nature of cultural and paleontologic resources, most disruptive impacts will be permanent and irreversible. Residual adverse effects thus could result from implementation of any of the Alternatives evaluated in this PEIS. Ultimately, however, compliance with the Montana State Antiquities Act would reduce any potential residual effects from development.

4.2.14.5 Irretrievable and Irreversible Commitments of Resources

Because of the nonrenewable nature of cultural and paleontologic resources, most disruptive impacts will be permanent and irreversible. Implementation of any of the Alternatives could result in irreversible or irretrievable commitments of cultural or paleontologic resources. Ultimately, however, compliance with the Montana State Antiquities Act would reduce irreversible or irretrievable commitments of significant cultural or paleontologic resources.

4.2.14.6 Short Term Uses versus Long Term Productivity

Because of the nonrenewable nature of cultural and paleontologic resources, most disruptive impacts will be permanent and irreversible. Short-term impacts to cultural and paleontologic resources include impacts described above. Long-term productivity of the landscape, although modified by development, would not be affected. Ultimately, however, compliance with the Montana State Antiquities Act would reduce adverse effects to Heritage Properties and scientifically significant paleontologic resources.

4.2.15 Community Infrastructure

4.2.15.1 Statewide Overview

The condition of community infrastructure varies across the state. Transportation systems, sewer and water facilities, public facilities and services generally reflect local economic conditions and the ability of the tax base to support construction and maintenance. Typically communities prepare capital improvement plans to address overall community infrastructure and services needs, based on need and the availability of financing. Projects are typically financed through a combination of state and federal funding and local mechanisms including special improvement districts, general obligation and revenue bonds, and direct appropriation.

Montana's land use statutes, particularly the Montana Subdivision and Annexation statutes require extension of services to support new development. The costs associated with the provision of streets, sidewalks, lighting, sewer, and water are typically paid by the developer and/or the ultimate owners of the property involved.

4.2.15.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would not impact community infrastructure and services.

- Alternative A – Current Program
 - Industrial and Commercial Uses – The REMB would rely on the developer to build and finance the infrastructure necessary to support any new activity or to participate fully in community-wide efforts to make infrastructure improvements. The REMB, through its industrial and commercial lessees would participate in Special Improvement District programs to finance capital improvements and to pay any user fees associated with the provision of services such as sewer, water and garbage disposal.
 - Residential Uses – Under Alternative A, proposals for residential development would be largely developer initiated. Adherence to local land use regulatory processes, particularly subdivision requirements would ensure that community infrastructure and services needs would be addressed.
- Alternatives B – Diversified Portfolio and B-1 – Conservation Priority
 - Industrial and Commercial Uses – The REMB would rely largely on developers and lessees to address infrastructure requirements associated with particular projects. However, under Alternative B, the REMB will be more active in assisting developers in identifying infrastructure needs and in locating potential resources for implementing projects. Up to \$500,000 per year would be available to improve land entitlements, such as extension of infrastructure facilities. The economic analysis (Appendix D) suggests that up-front expenditures to improve entitlements to raw land would increase the average rate of return to the Trusts.
 - Residential Uses – Proposals for residential development under Alternatives B and B-1 would be largely developer initiated. Adherence to local land use regulatory processes, particularly subdivision requirements would help assure that community infrastructure and services needs would be addressed. However, in addition, the REMB would direct some of its staff resources to in overall community improvements planning in order to better position its land with respect to existing and planned community infrastructure development.

- Alternatives C – Focused Portfolio and C-1 – Conservation Priority
 - Industrial and Commercial Uses – Greater emphasis would be given to the acquisition of existing commercial (including multi-family residential properties) and industrial facilities. In most cases, these facilities would already have the necessary community infrastructure and services in place. Also under Alternatives C and C-1, the REMB would work with potential lessees and the local government to identify appropriate strategies for addressing infrastructure requirements for new development. Up to \$1 million per year would be available to improve land entitlements, such as extension of infrastructure facilities. The economic analysis (Appendix D) suggests that up-front expenditures to improve entitlements to raw land would increase the average rate of return to the Trusts.
 - Residential Uses – As under Alternatives A, B and B-1, developers of residential properties would largely be responsible for addressing community infrastructure and services needs. Some infrastructure improvements to raw land could be initiated by the REMB to improve land entitlements.

4.2.15.3 Cumulative Effects

Under all the Alternatives the REMB would share in community growth. While the percentage of development on Trust Land would vary by alternative, demand on overall community infrastructure would remain a constant. What distinguishes the alternatives from each other is the degree to which the REMB would engage in addressing infrastructure requirements associated with its residential, commercial and industrial programs. In addition, under all Alternatives, the REMB would follow land use regulatory processes, and work with the local governing bodies and project developers to assure that impacts on community infrastructure and services were appropriately addressed. Finally, as part of the site selection process presented in Chapter 2, the proximity and availability of infrastructure to Trust Lands would serve as an indicator to the suitability of land for future use and development (see Figure 2-4 and associated narrative).

4.2.15.4 Residual Adverse Effects

There will be no residual adverse effects.

4.2.15.5 Irretrievable and Irreversible Commitments of Resources

Not Applicable

4.2.15.6 Short Term versus Long Term Productivity

Not Applicable

4.2.16 Taxation – Property Tax

4.2.16.1 Statewide Overview

Property in Montana is subject to advalorem taxes levied on the basis of property type and value. The Montana legislature has determined that different types of property and property used for different purposes should be taxed at different rates and bear a different proportion of the overall tax burden. Under 15-6-101MCA, the state has identified a variety of property classifications. Among these are Class 3 – Agriculture, Class 4 – residential and commercial real estate, Class 10 – Forested Lands, and eight other classifications. (Industrial properties are classified under a variety of categories depending on the specific type of industry). The classification rates for residential, commercial and industrial properties are generally higher than those for timber and agricultural properties.

Property tax rates are calculated in the following manner: The assessed valuation of the property is multiplied by the classification rate to obtain the taxable value. Taxable values are then multiplied by the local mill levy to derive the actual tax. A mill is equal to 1/1000 of the entire taxable value of the jurisdiction of the county and municipality within which the property is located. The number of mills levied varies by jurisdiction and is dependent on the overall tax base. Property taxes are levied on both the value of the land and on any improvements. Generally, approximately two thirds of the property taxes collected help fund the local public system, K-12. Seven mills are directed to the state university system and the remaining one third supports local government services and infrastructure. Non-permanent residential improvements such as trailers and recreational cabins located on leased properties are taxed under Montana's personal property statutes.

- **Special Fees and Assessments** – In addition to property taxation, land and improvements are subject to a variety of special fees for services (garbage, fire and ambulance) and capital improvements (streets, sidewalks, sewers, lighting). Payments for these services are often paid through special improvement districts (SID's) or Rural Improvement Districts (RID's). Properties exempt from advalorem taxes are not necessarily exempt from special fees.
- **Exemptions** – Lands and improvements owned by local, state and federal government agencies are exempt from property taxes as are properties owned by certain non-profit organizations.
- **Beneficial Use Taxes** – Exempt land and improvements that are leased to a private entity engaged in a business activity are subject to taxation. Under 15-24-1203, MCA a tax is imposed and must be collected tax "upon the possession or other beneficial use for industrial, trade or other business purposes enjoyed by any private individual, association or corporation of any property, real or personal, that for any reason is exempt from taxation." The tax is calculated in the same manner as for non-exempt properties.

4.2.16.2 Direct and Indirect Impacts

The direct and indirect impacts are addressed under each alternative. It is assumed that conservation uses under all alternatives would not affect property tax levels.

- **Alternative A – Current Program** – Under Alternative A, residential, industrial and commercial growth on Trust Lands would be less [based on a proportional share of land base] than the rate of growth expected on other lands within the region. As a result, the development of residential, commercial and industrial uses on Trust Lands would contribute a corresponding amount to the tax base. This would occur through the payment of beneficial use taxes by lessees of commercial and industrial properties, the payment of personal property tax on residential improvements (cabins and trailers) located on leased residential lands, and the payment of property taxes on residential properties acquired through purchase of former Trust Lands.
- **Alternatives B – Diversified Portfolio and B-1 – Conservation Priority** – Under Alternatives B and B-1, the REMB would expect to share in direct proportion [proportionate share of land ownership] to the rate of growth in the region. As a result, the development of residential, commercial and industrial uses on Trust Lands would contribute a corresponding amount to the tax base. This would occur through the payment of beneficial use taxes by lessees of commercial and industrial properties, the payment of personal property tax on residential improvements (cabins and trailers) located on leased residential lands, and the payment of property taxes on residential properties acquired through purchase of former Trust Lands.
- **Alternatives C – Focused Portfolio and C-1 – Conservation Priority** – Under Alternatives C and C-1, the REMB would expect to share in a proportionately larger share (based on proportion of land ownership) of the expected growth in a region. As a result, the development of residential, commercial and industrial uses on Trust Lands would contribute a corresponding amount to the tax base. This would occur through the payment of beneficial use taxes by lessees of commercial and industrial properties, the payment of personal property tax on residential improvements (cabins and trailers) located on leased residential lands, and the payment of property taxes on residential properties acquired through purchase of former Trust Lands.

4.2.16.3 Cumulative Effects

Commercial and Residential properties – land and improvements – are taxed at the same rate under Montana's property tax statutes. Industrial development is taxed at various rates depending on the type of industry. As a general rule, property taxes are

equal to approximately 2% of the market value of land and improvements for commercial and residential properties. The percentage rate for industrial properties varies. Regardless of the Alternative, the development of commercial, residential and industrial uses, will add to the local property tax base.

It is also important to note that the development of commercial, residential and industrial uses provides would revenue to the beneficiaries of the Trust in three ways:

- Providing direct revenue to the State Trust
- Providing property tax revenue to local school districts
- Increasing the local bonding capacity to finance infrastructure improvements including those for schools.

4.2.16.4 Residual Adverse Effects

Not Applicable

4.2.16.5 Irretrievable and Irreversible Commitments of Resources

Not Applicable

4.2.16.6 Short Term versus Long Term Productivity

As property values increase over time, the development of commercial, residential and industrial uses on Trust Lands will increasingly contribute to the local tax base through property tax payments.

4.2.17 State Equalization Payments to Counties

4.2.17.1 Statewide Overview

In 1965, legislation was adopted providing for reimbursement to counties for loss of revenue where tax-exempt state land constituted in excess of 6% of total land area. Funds were paid to counties and distributed to the elementary districts (60% of the payment) and to the county road funds (40%). Subsequent changes in Montana statute have addressed the incorporation of the Trust Land Management program into the Montana Department of Natural Resources and Conservation and associated administrative changes. In 2001, the state overhauled its entire system of shared revenues. However, counties continue to be reimbursed for the tax-exempt state land in excess of 6% of the total land area pursuant to the original intent of the 1965 legislation. Over the past four years, the total amount paid to counties has averaged \$550,000 annually.

4.2.17.2 Direct and Indirect Impacts

The purpose of state the state equalization program is to compensate counties for lost tax revenue from tax-exempt state lands. Under all Alternatives, when Trust Lands are sold or leased for residential, commercial, or industrial uses, the resulting beneficial tax or direct property tax payments would more than compensate the counties for any lost equalization payments.

4.2.17.3 Cumulative Effects

Overall, counties will continue to benefit from Trust Lands located within their jurisdictions under all Alternatives. In areas where the development of residential, commercial and industrial uses is less likely to occur, equalization payments will continue to provide county governments with needed funds. In areas where the REMB is more active, the local jurisdictions will benefit from increased property taxes associated with economic activity on Trust Lands as well as from equalization payments.

4.2.17.4 Residual Adverse Effects

Not Applicable

4.2.17.5 Irretrievable and Irreversible Commitments of Resources

Not Applicable

4.2.17.6 Short Term versus Long Term Productivity

Not Applicable

4.3 MONITORING AND ACCOUNTING

4.3.1 Monitoring

A monitoring program would follow the "life" of the plan. The purpose of the monitoring plan is three fold. First the monitoring program would provide an ongoing evaluation of how the selected plan is being implemented in relationship to key growth indices. This would be primarily accomplished by comparing actual community growth (population and economy) in a land office region to actual growth and activities (leases, licenses, sales, easements, exchanges) on Trust lands. Growth is a trend measurement so monitoring checks would be at year 8 (2010) of the plan and at 5 year intervals thereafter. Secondly, the original assumptions of the plan would be monitored. Though the REMB might be properly implementing the plan, are the results as anticipated and, if not, do the assumptions need to be adjusted? Thirdly, the monitoring plan would include an evaluation of any effects of unforeseen changes in the physical, social, or economic conditions. This DEIS attempts to look almost 21 years into the future and unanticipated circumstances can be expected that cannot be reasonably anticipated at this time.

Monitoring reports would include summary information as listed below:

- Actual population and economic growth in land office regions and the state.
- Comparison of growth on trust lands (commercial, conservation, industrial, residential) to projections of Plan by Land office and state regions.
- Location and types of projects on trust lands reviewed by local regulatory processes (zoning, subdivision, annexation, extension of services, building permits, growth policy including neighborhood plans).
- Revenue return to the trusts from residential, commercial, industrial, and conservation uses by transaction category (lease, license, easement, sale).
- REMB staff (numbers & type) and program funding.
- Acres of land sales, exchanges, purchases by land use type.

- Balance account relative to HCP (refer to Table 3-13 and final HCP plan); reflects location and type of use on lands included in the HCP.
- Number of lands reclassified to “other” by location and original land classification with description of major affected natural and physical features of the project area.

A report to the TLMD and Board of Land Commissioners would be made at the intervals identified above. The reports would serve as a basis to test conformity to the assumptions of the selected plan and to identify processes to modify the plan as appropriate and necessary to make mid-course adjustments.

The REMB plan needs to be dynamic in the sense that this is a land use plan and implementation is affected by outside market forces and internally by legislation, Land Board policies, and funding, among others. Identification and implementation of projects (yet to be identified) is typically a multi-year process. Land use projects could occur gradually or in “spurts” or a combination of both. Years of trend information are necessary to fully assess the effectiveness of the assumptions. For this same rationale, local communities in Montana typically have a 20 year horizon for growth policies with interim updates as needed. The REMB plan should be allowed to “mature” to avoid premature adjustments before accurate and sufficient trend data can be compiled and properly assessed. More immediate reasons to amend the Plan could include the following critical situations:

- Funding is not available to achieve the selected management philosophy of the plan;
- Required legislative remedies to achieve the selected management philosophy are not accomplished or other legislation is enacted contrary to the selected plan;
- Certain critical elements of the plan are either not supported or implemented by the Board of Land Commissioners; or
- The Trust Land Management Division Administrator judges that the original assumptions supporting the Plan no longer apply.

Minor changes or additions that do not conflict with the overall management philosophy of the select Plan would not require programmatic review. This could include short-term fluctuations (5 year average) in project implementation (acres of new development or conservation lands), staffing changes, or funding allocations.

Chapter 5

Categorical Exclusions

Introduction and Purpose of the Chapter

Chapter 5 identifies those actions proposed for consideration as categorically excluded from MEPA documentation under any of the Alternatives as described in Chapter 2 of this PEIS. Categorical exclusions are types (or categories) of actions that normally do not have the potential to cause significant environmental effects. They do not require an EA or EIS, unless extraordinary circumstances occur. The following definition of categorical exclusion is from ARM (Administrative Rules of Montana) 36.2.522 (5):

‘Categorical exclusion refers to a type of action that does not individually, collectively, or cumulatively require an EA or EIS, as determined by rulemaking or programmatic review adopted by the agency, unless extraordinary circumstances, as defined by rulemaking or programmatic review, occur.’

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5.1 OVERVIEW

Under this PEIS, CE's are appropriate in those situations where no significant impact will occur as a result of the exemption and as provided for in MCA 77-1-121. The level of MEPA review will be commensurate with DNRC's obligations under MCA 77-1-121 recognizing local governmental actions and associated analysis when appropriate.

This chapter also details local government regulations and resulting actions, the level of analysis associated with those actions, and how they interrelate to satisfy MEPA requirements.

CE's are addressed further in the following Administrative Rules references:

5.1.1 Emergency Situations (ARM 36.2.539):

An agency may take or permit action having a significant impact on the quality of the human environment in an emergency situation without preparing an EIS. Within 30 days following the initiation of the action, the agency shall notify the governor and the Montana Department of Environmental Quality (DEQ) as to the need for the action and associated impacts and results. Emergency actions must be limited to those actions immediately necessary to control the impacts of the emergency. "Emergency actions" include, but are not limited to (ARM 36.2.522):

- Projects undertaken, carried out, or approved by the agency to repair or restore property or facilities damaged or destroyed as a result of a disaster when a disaster has been declared by the governor or other appropriate government entity
- Emergency repairs to public service facilities necessary to maintain service
- Projects, whether public or private, undertaken to prevent or mitigate immediate threats to public health, safety, welfare, or the environment

5.1.2 Extraordinary Circumstances

Any additional Categorical Exclusions would apply where there were no extraordinary circumstances. Extraordinary circumstances are situations that may create a potential for significant impacts and would trigger an EA or EIS MEPA analysis.

5.1.3 Categorical Exclusions from MEPA Documentation

Categorical exclusions from MEPA documentation would be pursued under all alternatives under scenarios presented in table 5-1.

Table 5-1. MEPA Exclusions/Exemptions – When Considered/Applied
Exempt per 36.2.523(5) A.R.M.
Lease and License administration including assignments, renewals and enforcement of terms and conditions
Lease/License modifications consistent with local regulations or MEPA document
Project Design
REMB Project List
Marketing
Administrative actions: routine, clerical or similar functions of a department, including but not limited to administrative procurement, contracts for consulting services, and personnel actions
Minor repairs, operations, or maintenance of existing equipment or facilities
Investigation and enforcement: data collection, inspection of facilities or enforcement of environmental standards
Ministerial actions: actions in which the agency exercises no discretion, but rather acts upon a given state of facts in a prescribed manner
Actions that are primarily social or economic in nature and that do not otherwise affect the human environment
Exempt per 77-1-121, M.C.A.
Development or adoption of a growth policy or a neighborhood plan pursuant to Title 76, chapter 1
Development or adoption of zoning regulations
Review of a proposed subdivision pursuant to Title 76, chapter 3
Actions related to annexation
Development or adoption of plans or reports on extension of services; and
Other actions that are related to local planning
Property Purchase
Short-term land use license (less than 7 days) involving no resource extraction or developed uses and conformity with applicable local permitting or land use regulations.
Examples would include weddings, dog shows, photography shoots, charity fund raising events, etc.

5.2 PROPOSED LOCAL REGULATORY COMPLIANCE UNDER THIS PEIS

The REMB of DNRC would comply with all applicable city, county, state, and federal laws. These include local land use regulations, air and water quality laws, the Antiquities Act, and the Endangered Species Act. Additionally, requirements of other agency programmatic Plans and policies will apply. There are several state law exceptions that apply to state land including: (1) MCA 76-2-402, which applies when an agency proposes to use public land contrary to local zoning regulations; and (2) MCA 76-3-205(2), which exempts state land from subdivision requirements unless the division creates a second parcel for sale, rent, or lease for residential purposes. However, it should be noted the REMB, under this PEIS, intends to waive these rights of exemption.

When evaluating a project proposed for Trust Lands under any of the Alternatives, the REMB would analyze all issues, policies and relevant regulations. The items to be addressed and the level of analysis would vary, depending on the nature of the project, its geographic location and the particular economic, social and environmental context in which it occurs. In general, however, the REMB would:

- Develop programs and actions in consideration of the goals and policies of the local growth policy (comprehensive or master plan), as applicable.
- Evaluate each proposed action using the funnel filtration process as described in Chapter 2 of the PEIS. The filtration process provides a framework for decision-making that follows the intent of MEPA with respect to the evaluation of potential impacts of a proposed action on the natural/physical and socio-economic environments. This would determine if the proposal should move forward.
- Engage in public involvement as provided for in local land use regulatory processes.
- The REMB and its lessees, licensees and permit holders would follow all local land use regulatory processes (zoning and/or subdivision ordinances) as applicable.

5.2.1 Description of Local Government Policies, Processes and Regulations

At the local level, land development is subject to the following statutes:

5.2.1.1 Growth Policies (76-1-601,MCA)

A growth policy may cover all or part of the jurisdictional area and must include the elements listed in subsection (3) of the Statute by October 1, 2006. The extent to which a growth policy addresses the elements of a growth policy that are listed in subsection (3) is at the full discretion of the governing body.

A growth policy must include community goals and objectives, maps and text describing an inventory of the existing characteristics and features of the jurisdictional area, including land uses, population, housing needs, economic conditions, local services, public facilities, natural resources and other characteristics and features as proposed by the planning board and adopted by the governing bodies. The growth policy must also include projected trends for the life of the growth policy for land use, population, housing needs, economic conditions, local services, natural resources and other elements proposed. In addition, a growth policy must include a description of policies, regulations, and other measures to be implemented in order to achieve the goals and objectives and

- a strategy for development, maintenance, and replacement of public infrastructure, including drinking water systems, wastewater treatment facilities, sewer systems, solid waste facilities, fire protection facilities, roads, and bridges
- an implementation strategy that includes
 - a timetable for implementing the growth policy
 - a list of conditions that would lead to a revision of the growth policy
 - a timetable for reviewing the growth policy at least once every 5 years and revising the policy if necessary

- a statement of how the governing bodies would coordinate and cooperate with other jurisdictions that explains:
 - if a governing body is a city or town, how the governing body would coordinate and cooperate with the county in which the city or town is located on matters related to the growth policy
 - if a governing body is a county, how the governing body would coordinate and cooperate with cities and towns located within the county's boundaries on matters related to the growth policy
- a statement explaining how the governing bodies would:
 - define the criteria in 76-3-608(3)(a) MCA
 - evaluate and make decisions regarding proposed subdivisions with respect to the criteria in 76-3-608(3)(a) MCA
- a statement explaining how public hearings regarding proposed subdivisions would be conducted

A growth policy may also:

- include one or more neighborhood plans. A neighborhood plan must be consistent with the growth policy
- establish minimum criteria defining the jurisdictional area for a neighborhood plan
- address the criteria in 76-3-608(3)(a), MCA
- evaluate the effect of subdivision on the criteria in 76-3-608(3)(a) MCA
- describe zoning regulations that would be implemented to address the criteria in 76-3-608(3)(a) MCA
- identify geographic areas where the governing body intends to authorize an exemption from review of the criteria in 76-3-608(3)(a) MCA for proposed subdivisions pursuant to 76-3-608 MCA

The planning board may propose and the governing bodies may adopt additional elements of a growth policy in order to fulfill the purpose of this chapter.

After adoption of a growth policy, the governing body within the area covered by the growth policy pursuant to 76-1-601 MCA must be guided by and give consideration to the general policy and pattern of development set out in the growth policy in the:

- authorization, construction, alteration, or abandonment of public ways, public places, public structures, or public utilities
- authorization, acceptance, or construction of water mains, sewers, connections, facilities, or utilities
- adoption of zoning ordinances or resolutions.

5.2.1.2 Zoning

- County Zoning – Zoning in unincorporated areas can occur by two methods: (1) the creation of a planning and zoning district, which

must be a minimum of 40 acres, known as "Part 1 zoning"; or (2) the establishment of county zoning, which can apply to all or part of the unincorporated area, known as "Part 2 zoning," but which requires the adoption of a growth policy. Public notification and a public hearing must be held prior to the adoption of either type of zoning.

1. Under Part 1 zoning, the board of county commissioners may create a planning and zoning district upon petition of 60 percent of the freeholders in the affected area. However, if freeholders representing 50 percent of the titled property ownership in the district protest the establishment of the district within 30 days of its creation, the board of county commissioners may not create the district. An area included in a district that is the subject of a protest may not be included in a zoning district petition for a period of one year.
2. Under Part 2 zoning, a board of county commissioners that has adopted a growth policy for the entire jurisdictional area may adopt zoning regulations for all or part of the jurisdictional area

76-2-203, MCA sets forth criteria and guidelines for zoning regulations as follows

(1) Zoning regulations must be:

(a) made in accordance with the growth policy or a master plan, as provided for in

76-2-201(2) MCA; and

(b) designed to:

- (i) lessen congestion in the streets;
- (ii) secure safety from fire, panic, and other dangers;
- (iii) promote public health and general welfare;
- (iv) provide adequate light and air;
- (v) prevent the overcrowding of land;
- (vi) avoid undue concentration of population; and
- (vii) facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.

(2) Zoning regulations must be made with reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout the jurisdictional area.

(3) Zoning regulations must, as nearly as possible, be made compatible with the zoning ordinances of the municipality within the jurisdictional area.

- Municipal Zoning – The municipal zoning enabling legislation is similar to that for counties. For example, zoning must also be “made in accordance with a growth policy,” interim zoning is authorized, a board of adjustment must be established, and the city or town council may provide for enforcement. Public notification and a public hearing must be held prior to the adoption of municipal zoning. Municipalities have, under certain conditions, the ability to extend the application of their zoning and subdivision regulations beyond their corporate limits in any direction, up to three miles for a city of the first class, up to two miles for a city of the second class, and up to one mile for a city or town of the third class. This authority is only conferred on municipalities that have adopted a growth policy, but does not apply in locations where a county has adopted a growth policy and accompanying zoning or subdivision regulations. Under these provisions, a municipality may enforce zoning or subdivision regulations as if the affected property were in its corporate limits. 76-2-304, MCA sets forth the purposes of municipal zoning as follows:

(1) Zoning regulations must be:

(a) except as provided in subsection (3), made in accordance with a growth policy; and

(b) designed to:

- (i) lessen congestion in the streets;
- (ii) secure safety from fire, panic, and other dangers;
- (iii) promote health and the general welfare;
- (iv) provide adequate light and air;
- (v) prevent the overcrowding of land;
- (vi) avoid undue concentration of population; and
- (vii) facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.

(2) Zoning regulations must be made with reasonable consideration, among other things, to the character of the district and its peculiar suitability for particular uses and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout the municipality.

(3) Until October 1, 2006, zoning regulations may be adopted or revised in accordance with a master plan that was adopted pursuant to Title 76, chapter 1, before October 1, 1999.

5.2.1.3 Subdivision and Platting

Title 76, Chapter 3, of the Montana Code governs subdivision and platting (the Subdivision and Platting Act). Montana law requires the governing body of every county, city, or town to adopt and provide for the enforcement and administration of subdivisions. Thus, in contrast with zoning, which is optional, subdivision regulation is mandatory in Montana.

The statutes require that subdivision regulations be adopted by the governing body only after a hearing. Subdivision review is a two-part process, review of a preliminary plat and a final plat, which is recorded. There is also an abbreviated process for review of minor subdivisions. The subdivision is subject to a public hearing, with published notice and notice to adjoining property owners.

The statutes specify minimum content requirements for subdivision regulations, which include:

- provisions for an environmental assessment
- procedures for the submission and review of subdivision plats
- the form and content of preliminary plats and documents to accompany the final plats
- identification of areas unsuitable for subdivision due to natural or human-caused hazards
- prohibition of subdivisions for building purposes for areas within the 100-year floodway
- standards for the design and arrangement of lots, streets and roads, grading and drainage, water supply, sewage, and solid waste disposal that meet regulations adopted by the department of environmental quality, and the location and installation of utilities
- procedures for review of preliminary plats by affected public utilities and agencies of local, state, and federal government having a “substantial interest” in a proposed subdivision
- procedures for the administration of park and open-space dedication requirements
- provisions for the establishment and recording of ditch easements.

5.2.1.4 Sanitations in Subdivisions Act

Title 76, Chapter 4 of the MCA is the Sanitation in Subdivisions Act, which is intended to protect the quality and potability of water for public water supplies and individual wells. The act charges the Department of Environmental Quality (DEQ)

with adopting rules, including sanitary standards, necessary for administration and enforcement of the act. The rules must provide the basis for approving subdivision plats for various types of water (including stormwater drainage), sewage facilities, and solid waste disposal, both public and private, and must be related to the size of lots; contour of land; porosity of soil; groundwater level; distance from lakes, streams, and wells; type and construction of private water and sewage facilities, and other facts affecting public health and quality of water for uses relating to agriculture, industry, recreation, and wildlife.

5.2.1.5 Floodplain and Floodway Management

Montana has a Floodplain and Floodway Management Act, MCA, Title 76, Chapter 5, and the lead state agency for administering it is the DNRC. Under MCA 76-5-301, local governments must adopt land-use regulations that meet or exceed minimum standards of the department in regards to controlling development in the designated floodplain or floodway. The department must enforce its own minimum standards through a state permit system when the local government has failed to adopt such land-use regulations after receiving state notice.

5.2.1.6 Annexation – Title 7, Chapter 2, Parts 42 – 47 govern the annexation of land into municipalities. In all cases of annexation, services must be provided according to a plan provided by the municipality, except for: (1) garbage services if they are already provided; and (2) in first class cities when otherwise mutually agreed upon by the municipality and the real property owners to be annexed.

5.3 RELATIONSHIP OF LOCAL GOVERNMENT PROCESSES TO MEPA ANALYSIS

Tables 5-2, 5-3, and 5-4 use a checklist to show how local government processes may be analogous to and address the various elements in a MEPA analysis. The left side of the table lists elements typically addressed in the MEPA process, and the right side cites how the local government process(es) address these elements. Comments and information from the public and appropriate local, state and federal agencies are sought to enable an analysis of the impacts on the physical, biological, social and economic environment during these local government processes.

Table 5-2. PROJECT DEVELOPMENT

ISSUE	LOCAL LAND USE POLICY/REGULATION
1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED: Provide a brief chronology of the scoping and ongoing involvement for this project.	GROWTH POLICY, ZONING, SUBDIVISION – All these processes require public notification and involvement. Public involvement includes legal ads, letters to adjacent and affected property owners, posting signs on affected property, and public hearings before planning boards and elected officials. Additionally, Title 76-6-206, MCA, also requires that all conservation easements shall be subject to review prior to recording by the appropriate local planning authority for the county within which the land lies in order to minimize conflict with local comprehensive planning. This review is advisory in nature.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:	GROWTH POLICY, ZONING, SUBDIVISION – Other agencies with jurisdiction are notified during the review processes and provided with an opportunity to comment on draft growth policies or proposed zoning and subdivisions.
3. ALTERNATIVES CONSIDERED:	GROWTH POLICY, ZONING, SUBDIVISION – Alternatives are considered as part of developing growth policies by planning staff, the public and elected officials. Alternative zoning designations are also considered during the zoning process, and alternative subdivision features, such as design and density are considered during the subdivision review process.

Table 5-3. IMPACTS ON THE PHYSICAL ENVIRONMENT

RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are fragile, compactable or unstable soils present? Are there unusual geologic features? Are there special reclamation considerations? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, SUBDIVISION – General geological and soil information is gathered during the development of growth policies. More specific information is gathered for the environmental assessment portion of subdivision review.
5. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION, FLOODPLAIN AND FLOODWAY MANAGEMENT – Information on water bodies, aquifers and floodplains is collected for growth policies. Site-specific information is required during the zoning and subdivision review processes. Any project proposed in a floodplain also requires detailed information.
6. AIR QUALITY: would pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Regional air quality is identified during growth policy development. The transportation plan, a component of the growth plan in larger urban areas, must contain an air quality model to estimate transportation impacts. Site-specific air quality impacts are identified during zoning and subdivision review.
7. VEGETATION COVER, QUANTITY AND QUALITY: Would vegetative communities be permanently altered? Are any rare plants or cover types present? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – General location maps of vegetation are collected for growth policies, and site specific information is identified during zoning and subdivision review processes.
8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Habitat information is gathered from appropriate agencies for the growth policy and these agencies are asked to review and comment on potential impacts of site-specific zoning and subdivision proposals.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetland? Sensitive Species or Species of special concern? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Same as # 8 above.
10. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	GROWTH POLICY, ZONING, SUBDIVISION – Historical and cultural information is sought from local historic districts and the State Historic Preservation Office (SHPO) during growth policy development and zoning and subdivision review.
11. AESTHETICS: Is the project on a prominent topographic feature? Would it be visible from populated or scenic areas? Would there be excessive noise or light? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Some general information on prominent features is collected for growth policies, but more detailed information, including mitigation measures, required for review during the zoning and subdivision processes.
12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Would the project use resources that are limited in the area? Are there other activities nearby that would affect the project? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Environmental resource demands are addressed during growth policy development. Growth policies and transportation plans typically use a 20 – year timeframe, but are updated more frequently (every 5 – 10 years, depending on the rate of change in an area).
13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA: Are there other studies, plans or projects on this tract? Are cumulative impacts likely to occur as a result of other private, state or federal current actions w/n the analysis area, or from future proposed state actions that are under MEPA review (scoping) or permitting review by any state agency w/n the analysis area?	GROWTH POLICY, ZONING, SUBDIVISION – Other environmental documents are gathered and used during growth policy development, and also referenced and/or provided during zoning and subdivision review.

Table 5-4. IMPACTS ON THE HUMAN POPULATION

RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
14. HUMAN HEALTH AND SAFETY: Would this project add to health and safety risks in the area?	GROWTH POLICY, ZONING, SUBDIVISION – Public health and safety are considered throughout the process of developing growth policies and zoning and subdivision review. Health departments, emergency services and other appropriate agencies are asked to review and comment.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Would the project add to or alter these activities?	GROWTH POLICY, ZONING, SUBDIVISION – Growth policies identify areas appropriate and necessary for these activities. Zoning, which must comply with the growth policy, reflects these land use activities, and subdivision review criteria must also address the growth policy and zoning designations.
16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Would the project create, move or eliminate jobs? If so estimated number. Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING – Historical and estimated employment is gathered for a growth policy and land use designations take these into account. The number and type of employees, wages and where employees would come from are frequently considered during zoning review and hearing processes.
17. LOCAL AND STATE TAX BASE AND TAX REVENUES: Would the project create or eliminate tax revenue? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Growth policies identify historical and estimated future income data at the regional level. Specific impacts on the local tax base are prepared during zoning and subdivision review.
18. DEMAND FOR GOVERNMENT SERVICES: Would substantial traffic be added to existing roads? Would other services (fire protection, police, schools, etc) be needed? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Larger urban areas in Montana would also have a component of the growth policy that specifically addresses transportation. Evaluating demand for government services is an integral part of all three processes.
19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	GROWTH POLICY, ZONING, SUBDIVISION – See response to # 13 above.
20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, SUBDIVISION – Existing and future recreational areas are identified in growth policies. Major subdivisions are subject to park and open-space dedication requirements.
21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Would the project add to the population and require additional housing? Are cumulative impacts likely to occur as a result of this proposed action?	GROWTH POLICY, ZONING, SUBDIVISION – Growth policies must include existing and future housing needs, based on population trends. Zoning designations, based on the growth plan, specify the location and density of housing units and other land uses. Location and density of lots is then set during the subdivision review.
22. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	GROWTH POLICY, ZONING, SUBDIVISION – The population analysis in the growth policy examines population by race, age and sex. Potentially affected persons and groups are also notified of zoning and subdivision proposals in their area and provided an opportunity to comment.
23. CULTURAL UNIQUENESS AND DIVERSITY: Would the action cause a shift in some unique quality of the area?	GROWTH POLICY, ZONING, SUBDIVISION – Identification of these impacts would primarily occur through comments received during the public comment portion of these processes.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES: Is there a potential for other future uses? Is future use hypothetical? What is the estimated return to the trust. Are cumulative impacts likely to occur as a result of this proposed action?

GROWTH POLICY, ZONING, SUBDIVISION – These other impacts and potential uses would likely arise during the review of drafts of the growth policy and during the public comment phase of the growth policy, zoning and subdivision review.

List of Preparers

Montana Department of Natural Resources and Conservation

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Patrick Rennie, Archaeologist, Agriculture and Grazing Management Bureau

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Terry Grotbo, Maxim Environmental Services
Jeanne Caddy, Caddy Shack Ink
Phoebe Patterson, Patterbacher, Inc.

List of Agencies, Businesses, Groups, Organizations and Individuals Contacted

AERO	Bozeman Public Library	CS&K Tribes Natural
Alliance for the Wild	Brand S Lumber Company	Resources Dept.
Rockies	Bruce Bugbee & Associates	Daily InterLake
American Public Land	Bureau of Land	DAMSCHEN-ENTRANCO
Exchange	Management	Darby Public Schools
American Wild Lands	Butte LDC	Deer Lodge Schools
Anaconda Leader	Butte Silver Bow Weed	Defenders of Wildlife
Anaconda Local Devel.	District	Dept Planning &
Corp.	Butte-Silver Bow Planning	Community Dev
Anaconda-Deer Lodge	C.A.R.E.	Dept Planning &
Planning	Canyon Coalition	Community Developme
Applied Communication	Carbon County Weed	Dept. of Sociology
Con	District	DEQ
Attorney General's Office	Cascade County Planning	Dillon Public Library
Back Country Horsemen of	Cascade County Weed	DNRC
Montana	District	DNRC Forest Mgmt. Bureau
Back Country Horsemen--	Cascade County Weed	Dwight Harrison Ranch Co.
C.M. Russell	Mgmt. District	E. Sanders County
Bear Paw Development	Cascade Timber Company	Sportsmens Club
Corp.	Char-Koostra News	Eastern Plains RC & D
Bearpaw Development	Chippewa Cree Tribal	Ecology Center
Corp.	Council	Economic Development
Beaverhead Co. Resource	Citizens for a Better	Economics Department
Use Committee	Flathead	Environmental Health
Beaverhead National	City of Helena/L&C	Planning
Forest	County	Environmental Quality
Belgrade Chamber of	City of Lewistown	Council
Commerce	City of Red Lodge	Extension Service - Mineral
Belgrade Planning Dept.	City of Whitefish	County
Berg Lumber Company	City Planning	F.H. Stoltze Land & Lumber
Big Sky Upland Bird Assn.	City-County Planning	Co.
Bigfork Volunteer Fire	Clark Fork Coalition	F.H.Stoltze Land & Lumber
Dept.	Coal./Approp. Mgmt. Of	Co.
Billings Chamber of	State Lands	Fallon County
Commerce	Cold Mountain Cold Rivers	Ferguson Enterprises
Billings Public Library	Community Development	Fischer & Associates
Billings Rod & Gun Club	Dept	Fish, Wildlife & Parks
Biology Department	Community Dev & Planning	Fish, Wildlife & Parks -
Bitter Root Land Trust	Community Development	Region 1
Bitterroot Chamber of	Ser	Fish, Wildlife & Parks -
Commerce	Concerned Citizens for	Region 2
Bitterrooters for Planning	Cottonwood	Fish, Wildlife & Parks -
Blackfeet Tribal Business	Confederated Salish &	Region 3
Council	Kootenai Tribes	Fish, Wildlife & Parks -
Blue Ribbon Coalition	Corvallis Public Schools	Region 5
BN Santa Fe Railway Co.	County School	Fish, Wildlife & Parks -
Boise Cascade Corporation	Superintendent	Region 6
Bozeman Chamber of	Crow Tribal Council	Fish, Wildlife & Parks -
Commerce	Crow Tribal News	Region 7
Bozeman Daily Chronicle		Five Valleys Land Trust

Flathead Audobon Society
 Flathead Basin Commission
 Flathead Forest Watch--
 Tally Lake
 Flathead Land Trust
 Flathead National Forest
 Flathead Regional
 Development
 Flathead Regional Dvmt
 Flathead Regional
 Planning
 Flathead Resource
 Organization
 Flathead Valley
 Community College
 Flathead Wildlife, Inc.
 Fort Belknap Community
 Council
 Fort Belknap Newsletter
 Fort Peck Tribes
 Fred Bell Real Estate
 Friends of the Bitter Root
 Friends of the Wild Swan
 GAIN
 Gallatin Co. Planning Dept.
 Gallatin County Planning
 Gallatin Development
 Corporation
 Gallatin Valley Land Trust
 Gateway Economic Devel.
 Glacier Reporter
 Glendive Chamber EDC
 Gough, Shanahan, Johnson
 & Waterman
 Governor's Office
 Great Falls Chamber of
 Commerce
 Great Falls City-County
 Planning
 Great Falls Tribune
 Great Northern Devel.
 Corp.
 Greater Yellowstone
 Coalition
 Hampstead Partners
 Harold Young & Associates
 Headwaters RC &D
 Helena Chamber of
 Commerce
 Helena Public Library
 High Plains Development
 Authority
 High Plains News Service
 High Plains Warrior

Hill County Health &
 Planning
 Hill County Weed District
 Hungry Horse News
 Intermountain Forest
 Industries
 JGA Architects, Engineers
 Jim McGill Logging
 Jobs Now
 KAJ TV
 Kalispell Area Chamber of
 Commerce
 Kalispell Public Library
 KALS
 KANA / KGLM
 KATL
 KATQ
 KBKO
 KBLI
 KBOW / KOPR
 KBOZ
 KCAP / KZMT
 KCFW TV
 KCGM
 KCTZ TV
 KDBM
 KDRG
 KDWG / KCTR
 KECI TV
 KEIN / KLFM
 KEMC
 KFBB TV
 KFLN
 KGEZ
 KGHL / KIDX
 KGLE
 KGLT
 KGRZ / KDXT
 KGVW
 KHDN
 KHKR
 KHMT / KSCI TV
 KIKC
 Kinney Consulting Services
 KLCB / KTNY
 KLCY / KYSS / KGVO
 KLTZ / KLAN
 KLYQ / KBMG
 KMMR
 KMMS / KSCY
 KMON / KLFM
 KMSM
 KMSO
 KMTA / KMCM

KMTF TV
 KMTX
 KOFI
 KOJM / KPQX
 KPAX TV
 KPRK
 KQDI
 KQRK
 KRTV
 KSEN / KZIN
 KTGF TV
 KTMF TV
 KTVH TV
 KTVM TV
 KTVQ TV
 KUFM
 KULR TV
 KURL
 KUSM TV
 KWYS
 KXEI
 KXGF / KAAK
 KXGN / KDZN
 KXGN TV
 KXLF TV
 KXLO / KLCM
 KXLT
 KXTL / KQUY / KAAR
 KYA / KRRX / KBLG
 KZLO / KOB
 Lake Co. Community Devel.
 Lake County
 Land Use & Planning
 Lee Newspapers
 Legislative Council Library
 Lewis & Clark County
 Planning
 Lewistown News-Argus
 Lincoln Co. Econ. Devel.
 Council
 Little Shell Tribe of
 Chippewa Indians
 Livingston Enterprise
 Livingston Planning Dept
 Lolo National Forest
 Louisiana Pacific
 Corporation
 Louisiana-Pacific
 Corporation
 Lubrecht Forest
 Maclay Law Firm
 Madison Co. Planning
 Office
 Madison County Planning

Madison County Weed
Board
MAEDC
Marchesseau Ranches
Matson's Laboratory, LLC
MDHES/WQD
MDOC
Meagher County Weed
Program
Medicine Lake Outfitters
Medicine River Canoe Club
MEIC
Michigan Tech University
Mid-Yellowstone Land Trust
Miles City Public Library
Mineral Independent
Mineral Management
Division
Missoula County Public
Schools
Missoula Independent
Missoula Office of
Planning
Missoula Public Library
Missoulia
MJB Contracting, Inc.
Montana 4x4 Association
Montana Assn. Of
Conservation Districts
Montana Association of
Conservation Districts
Montana Association of
Realtors
Montana Attorney
General's Office
Montana Audubon Council
Montana Audubon Society
Montana Conservation
Voters Education Fund
Montana Dept. of
Agriculture--TSB
Montana Ecosystem
Defense Council
Montana Ecosystems
Defense Council
Montana Environmental
Info. Ctr.
Montana Environmental
Information Center
Montana Farm Bureau
Montana Farmers Union
Montana Fire Bureau
Montana Fiscal Forums
Montana Land Reliance

Montana Logging Assn.
Montana Logging
Association
Montana Natural Heritage
Program
Montana Old Growth
Project
Montana Outfitters &
Guides Assn.
Montana River Action
Montana Smart Growth
Coalition
Montana Snowmobile Assn.
Montana Standard
Montana State
Leaseholders Assn.
Montana State Library
Montana Stockgrowers
Assn.
Montana Trout Unlimited
Montana Wilderness Assn.
Montana Wilderness Assn.-
Bitterroot
Montana Wilderness
Society
Montana Wood Products
Assn.
Montanans for Multiple
Use
MonTRUST
MPC
MRA
MSBA
MSU College of
Technology
MSU Extension Service
MSU Lincoln County
Extension
MT Assoc. of Realtors
MT Business Capital Corp.
MT Chamber of Commerce
MT Coalition for Approp.
Mgmt. Of State Lands
MT Community Devel.
Corp.
MT Dept of Commerce
MT Dept. of Agriculture
MT Rural Devel. Partners,
Inc.
National Wildlife
Federation
Natural Resources
Conservation Svce.
Newsletter

Ninemile Ranger District
North Fork Improvement
Assn.
North Fork Preservation
Assn.
Northern Broadcasting
Systems, Inc.
Northern Cheyenne Tribal
Council
Northern Plains Resource
Council
NW Regional RC & D
OEA Research
Office of Planning &
Grants
Office of Public Instruction
Office of Senator Conrad
Burns
Office of Senator Max
Baucus
Office of the Legislative
Auditor
Owens & Hurst Lumber Co.
Park City Environmental
Council
Park Conservation District
Park County Economic
Devel.
People for Elk
People for the West
PhillCo Economic Growth
Council
Plains Public Schools
Plains Schools
Plan Helena
Planning Board
Planning Board/Zoning
Planning Department
Plum Creek Land Use
Planning
Plum Creek Manufacturing
Plum Creek Marketing Inc.
Plum Creek Timber Co.
Plum Creek Timber Co., Inc.
Plum Creek Timberlands
Ponderosa Snow Warriors
Porteen & Associates
Prairie Co. Econ. Devel.
Council
Public Lands Access Assoc.,
Inc.
Public Lands Association
Pyramid Mountain Lumber

Pyramid Mountain Lumber Co.
Pyramid Mountain Lumber, Inc.
Ravalli Co. Econ. Dev. Authority
Ravalli Co. Fish/Wildlife Assoc.
Ravalli County
Ravalli County Fish & Wildlife Assn.
Richland County Weed District
Robert Peccia & Associates
Rocky Mountain Elk Foundation
R-Y Timber, Inc.
SBC Realty Partners
School of Forestry
SE Montana Sportsmen's Assn.
Secretary of State's Office
Seeley Lake Public School District
Senator Max Baucus
Shea Ranch, Inc.
Sheridan County Planning
Sidney Chamber of Commerce
Sieben Ranch Co.
Skyline Sportsmen
Smart Growth Missoula
Soil & Water Conservation Society
Sonoran Institute
Southeastern MT Devel. Corp.
Southeastern Sportsmen's Assn.
St. Patrick Hospital
State Auditor's Office
State Historic Preservation Office
State Land Coalition
State of Montana
Stillwater County Planning
Stimson Lumber Co.
Sublette County Planning
Swan View Coalition
Sweet Grass County Planning
Sweet Grass County Weed Coordinator

Target Range Public Schools
Target Range School
Tee Bar Ranch
Teton County Develop. Corp.
The Hunters Alliance
The Maureen and Mike Mansfield Library
The Nature Conservancy
Thompson Falls Land Alliance
Tranquil Acres
Travel Montana
Trout Unlimited
U.S. EPA--Montana Office
U.S. Fish & Wildlife Service
U.S. Senator Conrad Burns
UM
Upper Missouri Breaks
Audubon
US West
USDA Forest Service R-1
USDA/RD
USDI Bureau of Land Management
USDI Bureau of Land Mgmt.
USFS Bitterroot National Forest
USFS Flathead National Forest
USFS Gallatin National Forest
USFS Lewis & Clark National Forest
USFS Lolo National Forest
Weed District--Broadwater County
Weed District--Missoula County
Weed Program - Silver Bow County
Western Environmental Trade Assoc.
Western Montana College
WETA
Wheatland Co. Econ. Devel.
Whitefish County Water & Sewer District
Whitehall Schools
Wilderness Society
Wing Logging

Wotanin Wowapi
Yellow Bay Research Station
Yellowstone Co. Weed Control
Yellowstone County Planning
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Rob Ament
Steve Antonioli
Steve Barrett
Roger Bergmeier
Kathy Bramer
Bud Clinch
Bob Brown
Wayne Finch
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Scott Mcleod
Neil Meyer
Jeff Hagener
Greg Munther
Louis Hawkes
Monte Cooper
Craig Sharpe
John Bloomquist
Ric Smith
Jamie Williams
Dale Burke
Wendy Ninteman
Paul Putz
Joe Hovenkotter
Arlene Montgomery
Jim Morrison
John Morrison
Graden Oeherich
Brian Pilcher
Judy Martz
Gordy Sanders
Gregg Schildwachter
Melissa Shannon
Jerry Sorenson
Malcolm Thompson
Steve Thompson
Tom Tintinger
Nancy Warren
Dan Whyte

Ryan Shaffer
Rebecca Watson
Richard Wackrow
Terry Albrecht
Don Allen
John Alton
James Armstrong
Rod Ash
Jack Atcheson
Peggy Atchley
George Bailey
Beth & Tim Baker
Tara Barrett
John Baucus
Brian Beal
Timothy Bechtold
Dale Becker
Margaret Beer
Mrs. Mary Beer
Jim Belsey
Paul Berg
Sharon Bergman
Kim Birck
Martha Bishart
Clint Blackwood
D. L. Blank
Dan Blomquist
Lex Blood
Bob Boeh
Rex Boller
John Bonnicksen
Tim Border
Jim Bramer
James Bray
Margaret Brockmann
Vivian Brooke
Neil Brown
Bob Brown
T. Millar Bryce
Steven Bryson
Ronald Buenteimeier
Bruce Bugbee
Bob Bushnell
Janet Camel
Rick Cannada
Dan Cantrell
Bob Carlson
J. Carter
Keith Christian
Chris Clancy
Monte Clemow
Ben Cohen
Ferne Cohen
Robert Cole

Gerald Cole
Anthony Colter
Susan Colvin
Adena Cook
Judy Cornell
Elaine Corrigan
Elna Darrow
George Darrow
Jerry Dimarco
Susan Donnelly
Daron Duncan
William Dwelle
Jim Edwards
Dave Jackson
David Evenson
William Eystad
Jean Ferguson
Donna Finstad
Tom France
Chris Frandsen
Harvey Fredericksen
Beth Furbush
Brad Gestring
Peter Gleim
Hank Goetz
Stormy Good
Ralph Goode
Peter Graziano
Joe Gutkoski
Dr. Jim Habeck
David Hadden
Bill Hagen
Jim Hagenbarth
Harold Hale
Larry Hamilton
Robin Hamilton
Keith Hammer
Thomas Harding
Joe Unterreiner
Fern Harmon
Daniel Harper
C. Hauptman
Delbert Hawkins
Brace Hayden
Jon Heberling
John Hebnes
Bonnie Heidel
Tom Heintz
Betty & George Heliker
Joe Helle
Bill Heasley
Scott Hicswa
Jeff Hindoen
John Hodnick

Marcia Hogan
Ira Holt
Robert Holt
Joel Holtrop
John Hossack
Harold Hunter
Phoebe Hunter
Warren Illi
Reuel Janson
Jim Jensen
Jean Johnson
Merriel Johnson
Horace Jones
Donald Julian
Kahnstamm
Anne Katsaris
Nathan Kauffman
Sheila Keller
Leroy Kelly
Stephen Kelly
Steve Kelly
Steve Kenley
Melvin Ketland
Jack Kirkley
Ken Knudson
Rem Kohrt
Bert Kraft
Harry Lafriniere
Larry Laknar
Dan Lechefskey
William Leonard
Stuart Lewin
Thorn Liechty
John Lipinski
Bob Logan
Robert Lucas
Andy Lukes
Leaf Magnuson
David Majors
Bill Maloit
John Mandzak
Robert Marchesseault
Gladys Martinell
Lisa Mascho
John McBride
Ward McCartney
Charles McCarty
Wally McClure
Steve Mccool
Floyd Mccubbins
Jim Mcdermand
Harold Mcdowell
Jim McGill
Sandy McIntyre

Kemper McMaster
Alan Mcquillan
Bruce Measure
Jan Metzmaker
Don Michels
Daniel Miles
Chris Miller
Neal Miller
Doris Milner
Brent Mitchell
Karen Mitchell
Craig Mohr
Ric Molen
Ron Moody
Gary Moon
Larue Moorhouse
William Morgan
Sam Morigeau
John Mortenson
Dee & Lavera Morton
Jeff Mosley
Barbra Mullin
Linda Mycek
Joel Nelson
John Nesser
Bob Habeck
Richard Southwick
Donald Nettleton
Mark Nicholson
Stanley Nicholson
Cecil Noble
Bonny Ogle
Randall Ogle
Jim Miller
Keith Olson
Peggy Trenk
Tracy Olson
Florence Ore
Bill Otten
Jerry Parker
Pam Parsons
Charlie Patton
James Phelps
Ronald Pierce
Steve Potts
Thomas Power
Ed Prach
John Puckett
Russ Ramlow
Doug Rand
Ann Rauser
Catherine Ream
Tarn Ream
Dave Remington

Mary Reynolds
Becky Richards
Candy Richter
Roger & Olive Robison
Tim Rollins
Bill Roney
Mark Rotar
Tim Ryan
Gary Ryti
Dale Bosworth
Robert Sawyer
Peggy Schmidt
Tony Schoonen
Franklin Schroeter
Joan Schumaker
Kathy Shaver
Mark Sheets
Steve Shelly
E. Smith
Judy Smith
Jeanne-Marie Souvigney
Rob St. Clair
Harold Stepper
Lory Stevenson
Bob Stone
Ed Stoots
Jay And Eve Stuckey
Dean Sturz
Rhonda Swaney
Vern Swanson
Nancy Sweeney
Tim Tanberg
Steve Taylor
James Thill
Ginger Thomas
Ross Titus
Dave & Ruth Torrence
Sara Toubman
Steve Tralles
Jack Tuholske
Terry Turner
Jean Uriau
Tony Veazey
Mike Volesky
Greg Waldrop
Michael Ware
Vicki Watson
Robert Weaver
Douglas Webber
Jeff Webber
Jerry Weber
James Welsh
Dave Whitby
George Widener

D. Wilson
Larry Wilson
Robert Wilson
Jim Wing
Gary Wolfe
Lorrie Woods
Wayne Worthington
Beverly Yager
William Yeats
Larry Youmans
John Youngberg
Mike Kupelik
Jim Carkulis
Christina Boyle
David Smith
Tim Ryan
Rick Evans
Margaret Morgan
Grant Parker
Todd Everts
Zak Anderson
Florence Anderson
George Bailey
Evan Barrett
Teddy Beebe
Mark Simonich
Vicky Bohlig
Larry Bonderud
Anne Boothe
Travis Brazill
Webb Brown
Cathy Burwell
Mike Carlson
Rosalie Cates
Kathryn Chioutsis
Penny Copps
Richard Crouch
Jim Davison
Emil Erhardt
Paul Tuss
Bernice Hash
Dick King
Billie Lee
Robert Leigland
Steve Myhr
Gloria O'rourke
Jim Plum
Sharon Rau
Linda Reed
Lynn Robson
Barry Roose
Renata Schroepfel
David Schwarz
Jim Smitham

Steve Snezek
Chuck Sperry
Thomas Swenson
Connie Ternes-Daniels
Linda Twitchell
Sandra Woldstad
Kent Wood
Debra Youngberg
Mayree Flowers
Marga Lincoln
Stuart Brandborg
Thompson Smith
Heather Mumby
Janet Ellis
Jim Barrett
Stephen Hendricks
Lin Smith
Warren Kellogg
Burt & Mary Sugarman
Jennifer Ferenstein
Dave Mceldery
Jay Wentz
Glenn Rickett
Gordon Schlepp
Franklin Slifka
Ralph Pomnichowski
Liz Harris
John Swope
Wes Synness
Rody Holman
Harold Young
John Gibson
Vince Fischer
Roger Schmidt
Gary Sloan
Ben Long
Raymond Frey
William Parker
J. Henderson
Anne Maclay
Helena Maclay
J.L. Ashmore
Reuel Jonson
Darlene Grove
Jack Jones
Dennis Espeland
Monte Sipe
John Moodry
Paul Sihler
Paul Georgeanne
Stacey Barta
Doug Soehren
Verda Swenson
Patricia Hogan

Gary Matson
Dave Russell
Steve Funke
Jim Manley
Terry & Dennis Divoky
Jobe
Mike & Hia Chapin
Jeanne & Dan Olson
Richard Hopkins
Anne Cossitt
Art Loendorf
Carol Mosher
Charles Hurin, Jr.
Betsy Forbes
Gary & Debby Gunderson
Aart Dolman
Lon Holzheumier
Jenny Yoneji
Patrick Boyd Stadley
Marjorie & Dave Maloney
Wade Crouch
Mike Parker
Dee Goss
Chris Ebeling
Gerry Jennings
Michael Hennessy
Bill Thomas
D. Starshine
Lauren Dundee
Helen Comer
Mark Good
Karen Davidson
Paul Edwards
Anne Hedges
Will Boland
Robert Rasmussen
Bob Kiesling
Candace West
Gayle Shirley
Ed Tinsley
Clayton Floyd
Charlotte & Jack Kress
Rj Degroot
Jane Peranteau
Jann Clouse
David & Carolyn Walsh
David & Marilyn Harmon
Diane Conradi
Marty Michelson
Don Schwennesen
Roland Frey
Clarence Taber
Jerry Giles
Brad Murfitt

Kelly Lu
Doris Fischer
Steve Kelly
John Shepard
Richard Gotshalk
Janis Moree
Duane Fedinand
Daniel Watson
Doug Habermann
Lauren Buckley
Alice Miller
John Shepard
Dick Spalding
Pat & Bruce Tucker &
Weide
Bob Vogel
Pamela Converse
Randy Gray
James Freeman
Toddy Perryman
Tim Davis
Barb Beck
J. David Slovak
Monty Rathie
Cal Cumin
Mark Giese
Sue & Jim Brown
Georgeanne Paul
Todd Breitenfeldt
Shirley Barrick
Bob Storer
Jack Eggensperger
Dan Rude
Anne & Greg Morely
Jim Richard
Sandy Fischer

ACRONYMS

ACOE	U.S. Army Corps of Engineers
AQRV	Air Quality Related Value
ARM	Administrative Rules of Montana
AUM	Animal Unit Month
BBER	U of M Bureau of Business and Economic Research
BLM	U.S. Bureau of Land Management
BMP	Best Management Practices
CE	Categorical Exclusion
CECRA	Comprehensive Environmental Cleanup and Responsibility Act (state)
CERCLA	Comprehensive Environmental Response, Compensation and Cleanup Act, also called Superfund (federal)
CFS	Cubic Feet per Second
CLO	Central Land Office, DNRC
CO	Carbon Monoxide
DEIS	Draft Environmental Impact Statement
DEQ	Montana Department of Environmental Quality
DNRC	Montana Department of Natural Resources and Conservation
DOE	U.S. Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
ELO	Eastern Land Office, DNRC
EPA	U.S. Environmental Protection Agency
EQC	Environmental Quality Council
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FTE	Full Time Equivalent
FWP	Montana Department of Fish, Wildlife & Parks
FY	Fiscal Year
GIS	Geographical Information System
HCP	Habitat Conservation Plan
ICC	Interstate Commerce Commission
ID	Identification
ITP	Incidental Take Permit
MAAQs	Montana Ambient Air Quality Standards
MAP	Montana Association of Planners
MCA	Montana Codes Annotated
MDEQ	Montana Department of Environmental Quality
MDFWP	Montana Department of Fish, Wildlife and Parks
MDHES	Montana Department of Health and Environmental Services
MDPHHS	Montana Department of Public Health and Human Services
MDOA	Montana Department of Administration
MDOC	Montana Department of Commerce
MDT	Montana Department of Transportation
MEPA	Montana Environmental Policy Act
MNHP	Montana Natural Heritage Program
MPDES	Montana Pollutant Discharge Elimination System
MSIS	Montana Sanitation in Subdivision Act
MSPA	Montana Subdivision and Platting Act

MWPCA	Montana Water Pollution Control Act
NAAQS	National Ambient Air Quality Standards
NELO	Northeastern Land Office, DNRC
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NO₂	Nitrogen Dioxide
NPS	National Park Service
NPV	Net Present Value
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWLO	Northwestern Land Office, DNRC
O₃	Ozone
OSHA	Occupational Safety and Health Agency
Pb	Lead
PCI	Per Capita Income
PCTC	Plum Creek Timber Company
PDR	Purchase of Development Rights
PEIS	Programmatic Environmental Impact Statement
PILT	Payment in Lieu of Taxes
PM-2.5	Particulate Matter with a diameter of 2.5 microns or less
PM-10	Particulate Matter with a diameter of 10 microns or less
PSD	Prevention of Significant Deterioration of Air Quality
REMB	Real Estate Management Bureau
RFP	Request for Proposal
RID	Rural Improvement District
RMS	Resource Management Standards
ROD	Record of Decision
ROI	Return on Investment
RUL	Recreational Use License
SCD	Sufficient Credible Data
SFLMP	State Forest Land Management Plan
SHPO	State Historic Preservation Office
SID	Special Improvement District
SIP	State Implementation Plan (for air quality)
SLO	Southern Land Office, DNRC
SMZ	Streamside Management Zone
SO₂	Sulfur Dioxide
SOSC	Species of Special Concern
SRUL	Special Recreational Use License
SWLO	Southwestern Land Office, DNRC
T&E	Threatened and Endangered Species
TDR	Transfer of Development Rights
TLMD	Trust Land Management Division, DNRC
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

GLOSSARY

Air Quality Related Value (AQRV)- a feature or property of a class I, class II, or class III PSD area other than visibility that a state or Indian tribe finds may be affected by air pollution. General categories of air quality related values include odor, flora, fauna, soil, water, geologic features, and cultural resources.

Alkaline: A measure of carbonate accumulation indicated by a high pH.

Alluvium: Sediment deposited by running water.

Andesite: A volcanic rock composed of andesine.

Animal Unit Month (AUM): The number of animals times the number of months they graze. An "animal unit" is a cow with calf; other animals count as different numbers of animal units, e.g., five sheep with lambs' count as an animal unit. Number of AUMs is stipulated in grazing leases.

Argillite: A rock that is slightly harder than claystone and softer than shale.

Asset Management: The active management of the trust's assets under a portfolio management mandate for the purpose of increasing the portfolio's value. Synonymous with portfolio management.

Badlands: A region nearly devoid of vegetation where erosion has cut the land into an intricate maze of narrow ravines, sharp crests and pinnacles.

Bedrock: Solid rock exposed at the surface or covered with unconsolidated materials.

Best Management Practices (BMP): Voluntary guidelines prescribed as minimum water quality protection standards for forestry operations. BMPs, if properly designed and applied, can limit non-point pollution.

Biodiversity or Biological Diversity: The variety of life and its processes. It includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur (From Keystone Center 1991).

Cadastral: A graphic representation of land ownership and or title and associated attributes

Calcareous: Containing calcium carbonate.

CAMA: Computer Assisted Mass Appraisal – database maintained by the Montana Department of Revenue with residential and commercial property tax information

Categorical Exclusion: Categorical exclusion refers to a type of action that does not individually, collectively, or cumulative require an Environmental Assessment (EA) or Environmental Impact Statement (EIS), as determined by rulemaking or programmatic review.

Cirquelands: A deep, steep-walled recess in a mountain, caused by glacial erosion.

Claystone: Clay hardened into rock.

Climax Community: That point in the development of a biotic community when the changes that normally occur in ecological succession cease. The main biotic components are not overthrown by new invaders. No new species become dominant in the biotic community. The environmental conditions of the habitat are relatively stabilized. (After Woodbury 1954. In: Schwarz et al. 1976)

Coarse woody debris, down woody material: Dead woody material such as stems or limbs, generally larger than 3 inches diameter.

Commercial: A proposed land use category that includes retail businesses, offices (private and public), service establishments, resort recreation, communication sites, and other similar uses that may be recognized a "commercial" in local zoning regulations. In additions, "raw" or undeveloped properties might also be identified for their potential commercial use through a highest and best use analysis.

Conservation: A proposed land use category that generally includes lands that have been purchased or leased to secure long-term rights for open space, preservation of habitat, natural areas, or other conservation purposes.

Conservation Land: Includes Federally designated areas such as National Parks and Monuments, Wilderness Areas, Wild and Scenic Rivers, Wildlife and Game Refuges, and lands protected by either Public/Private Conservation Easements.

Crustose lichen: A non vascular plant appearing like a crust.

Developer: A private or public entity that assembles the necessary resources and conducts activities to facilitate changing uses on a particular tract or tract of land.

Digital Elevation Model: A digital representation of a continuous variable over a two- dimensional surface by a regular array of z values referenced to a common datum. Digital elevation models are typically used to represent terrain relief. Also referred to as 'digital terrain model' (DTM).

2. An elevation database for elevation data by map sheet from the National Mapping Division of the U.S. Geological Survey (USGS).

3. The format of the USGS digital elevation data sets.

Dolomite: A common rock-forming mineral.

Drainage Basin: the land drained by a river system. See watershed.

Early-successional species (Seral, or Early-seral, species): A plant species associated primarily with an early stage in the successional development of a biotic community.

Easement: A right created by grant, reservation, agreement, prescription, or necessary implication, which one has in the land of another.

Economic Analysis: A process by which an activity is evaluated in terms of its effects on the market in which it is located, typically measured in terms of jobs created, services required and financial impacts on the community

Economic Impacts: the effects that result from an economic activity including but limited to the creation of jobs, the derivation of tax revenue, the cost of providing services and infrastructure, and the impacts to the natural and socio-economic environment

Ecotone: A transition zone between two habitats or communities.

Enabling Act: The act by which land was granted by congress to the state and held in trust for the support of common schools.

Endangered Species: A plant or animal species whose prospects of survival and reproduction are in immediate jeopardy. Its peril may result from one or many changes: loss of habitat, overexploitation, predation, competition, disease, or even unknown reasons. An endangered species must have help, or extinction may follow. It must be designated in the Federal Register by the appropriate Secretary as an "endangered species." (Schwarz et al. 1976)

Endangered Species Act (ESA): the Act that required consultation with the Fish and Wildlife Service (Interior) if practices on National Forest System lands may impact a threatened or endangered species (plant or animal). Direction is found in FSM 2670.

Environmental Impact Statement (EIS): A document in which anticipated environmental effects of a planned course or action or development are evaluated. The Montana Environmental Policy Act (MEPA) requires that such statements be prepared first in draft and then in a final form. An EIS includes the following points: (1) the environmental impact of the proposed action, (2) any adverse impacts which cannot be avoided by the action, (3) the alternative courses of action, (4) the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, (5) a description of the irreversible and irretrievable commitment of resources which would occur if the action were accomplished. (After Schwarz et al. 1976)

Environmental Quality Council (EQC): A 13 member legislative council that coordinates and monitors State policies and activities that affect the quality of the environment.

Entitlement: An improvement or action that increases the underlying value of the land to which it is applied. Entitlements may include the addition of physical infrastructure, land use designations and land use authorizations such as zoning

Forb: 1. Any herbaceous plant other than those in the Gramineae (true grasses), Cyperaceae (sedges) and Juncaceae (rushes) families—i.e., any non-grass-like plant having little or no woody material on it. (After Amer. Soc. Range Manage. 1964)

2. A palatable, broad-leaved, flowering herb whose stem, above ground, does not become woody and persistent. (Grim and Hill 1974) (Schwarz et al. 1976)

Forecasts: Predictions of future economic activity

Full-time Equivalent (FTE): A measure of number of personnel employed. One FTE is equal to one person working a 40-hour week.

Funnel Filter: A process to identify specific land tracts that may be suitable for residential, commercial, industrial, or conservation uses.

Geocode: The traditional definition is the process of identifying the coordinates of a location given its address. For example, an address can be matched against a TIGER street network to determine the location of a home. Also referred to as address geocoding. In the context of our use in this process it refers to the theoretically unique identifier for each parcel in the Montana Cadastral database.

Geographic data: The locations and descriptions of geographic features. The composite of spatial data and descriptive data.

Geographic database: A collection of spatial data and related descriptive data organized for efficient storage and retrieval by many users.

Geomorphic: Pertaining to the general configuration of the earth's surface.

GIS: Geographic information system. An organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Glacial till: Unstratified glacial drift of clay, sand, and gravel, forming poor subsoil impervious to water.

Glacier, glacial, glaciated: A mass of ice that moves in a definite direction and formed by the compression of ice; features created by a glacier; terrain molded by a glacier.

Gneiss: A coarse grained rock in which bands of granular material alternate with bands of mica.

Grid: A geographic data model representing information as an array of equally sized square cells arranged in rows and columns. Each grid cell is referenced by its geographic x,y location. See also raster and grid cell.

Grid cell: A discretely uniform unit that represents a portion of the Earth, such as a square meter or square mile. Each grid cell has a value that corresponds to the feature or characteristic at that site, such as a soil type, census tract, or vegetation class.

Growth Policy: Growth policies (formerly known as comprehensive or master plans) provide overall guidance to local governments in the growth and development of their communities. The primary focus of growth policies is on land uses, both existing and projected.

Habitat Conservation Plan (HCP): The HCP will address those lands that provide habitat for species currently listed or those that could be listed under the Endangered Species Act (ESA). The HCP offsets harm caused by lawful activities, such as forest management practices, by promoting conservation measures to minimize or mitigate impacts to threatened and endangered species.

Hydrogeomorphology: The science relating to the geographical, geological and hydrological aspects of water bodies and changes to these in response to flow variations and to natural and human-caused events such as heavy rainfall or channel straightening.

Hydrology: A science dealing with the properties, distribution, and circulation of water, specifically the study of water on the surface of land, in the soil and underlying rocks, and in the atmosphere, with respect to evaporation and precipitation. (After Webster 1963 In: Schwarz et al. 1976)

ID Team: A team that meets annually to allocate budgets and prioritize projects identified in the Unit/Land offices.

Igneous rocks: Formed by the solidification of molten or partially molten rock.

Incidental Take Permit: ???? Do we need this???

Industrial: A proposed land use category that includes manufacturing, wholesaling, warehousing, utilities, heavy transportation, sanitary landfills, sewage treatment facilities, wind farms, feedlots, grain storage bins, irrigation facilities, reclamation projects, electrical substations, intermodal shipping facilities, and similar uses. In addition, "raw" or undeveloped properties might also be identified for their potential industrial use through a highest and best use analysis.

Intermontane: Among or between mountains.

Intrusions: A body of molten rock that penetrates older rock.

Krumholtz: A vegetation type occurring at alpine timberlines that is composed of tree species but in this environment are strongly dwarfed and misshapen.

Lacustrine: Pertaining to, formed in a lake or lakes.

Land Banking: The purpose of Land Banking as provided for under 77-2-361 and 77-2-362, MCA is to sell various parcels of state lands and use the proceeds from the sales to purchase other land, easements, or improvements for the benefit of the beneficiaries of the respective trusts.

Land Development: Adding improvements and/or entitlements to land in anticipation of a change in its use..

Land Exchange: The exchange of trust lands owned by other public or private entities for non-trust lands that better serve the interest of the trust.

Land Sale: The act of selling; the transfer of property, or a contract to transfer the ownership of property, from one person to another for a valuable consideration, or for a price in money.

Late-successional species: A plant species associated primarily with a later stage in the successional development of a biotic community.

Lease: An agreement by which an owner of real property (lessor) gives the right of possession to another (lessee), for a specified period of time (term) and for a specified consideration (rent).

Lease of Development Rights: The temporary conveyance of development rights on a parcel of property that result in the limitation of the types of development that can occur on the land for a set period of time.

License: A special permission to do something on, or with, somebody else's property which, were it not for the license, could be legally prevented or give rise to legal action in tort or trespass.

Limestone: A sedimentary rock composed primarily of calcium carbonate.

Market Filter: The process of selecting physically suitable land for development based on favorable demographic and economic characteristics. The function of the Market Filter is to determine the demand for specific tracts within a certain geographic, demographic or socio-economic context..

MEPA: The Montana Environmental Protection Act (MEPA), which requires the evaluation of potential impacts that occur as the result of an action undertaken or licensed by the State of Montana

Mesic temperature regime: Mean annual soil temperature between 46.5 and 59.0 °F and the difference between summer and winter temperatures is greater than 41 °F.

Metamorphic rock: Rocks which have formed in the solid state in response to pronounced changes in temperature, chemical and pressure environment.

Metalliferous: containing or yielding metal

Metasedimentary rock: Partially metamorphosed sedimentary rocks.

Montana Antiquities Act: The act addressing the responsibilities of the State Historic Preservation Office and other state agencies regarding historic and prehistoric sites including buildings, structures, paleontological sites, archaeological sites on state owned lands.

Montana Environmental Policy Act (MEPA): Adopted during the 1971 session of the State legislature, MEPA is patterned after the NEPA. MEPA establishes Montana's environmental policy, processes and the EQC (MCA 75-1-101 - 324).

Moraine: A drift of glacial till deposited by a glacier, independent of underlying topography.

Mudstone: a rock formed from an indefinite mixture of clay, silt, claystone, siltstone, shale and argillite.

National Environmental Policy Act (NEPA): The basic national charter for environmental protection. NEPA became law in 1969 and establishes policy, sets goals, and provides means for carrying out the policy (40 CFR 1500.1).

Neighborhood Plan: A set of goals, policies and recommended action measures for a specific area within a larger planning jurisdiction that become part of the Growth Policy. It is more specific than the Growth Policy, but it reinforces and complies with growth plan policies. These goals and policies will provide overall guidance to the development of new regulations that will be binding on future development in the neighborhood.

Net Present Value (NPV): Today's dollar equivalent of accumulated future revenues, over the analysis period, less accumulated future costs.

Non-metalliferous: does not contain or yield metal

Non-point pollution source: Pollution without a single, identifiable source, such as that from road construction, cattle grazing, or agricultural practices. (see Point pollution source)

Noxious Weed: Plants that conflict with, interfere with, or otherwise restrict land management are commonly referred to as weeds. A plant that has been classified as a weed attains “noxious” status by an act of State legislation.

Other: Land not characterized as Mineral, Timber, and Agriculture and Grazing.

Outwash: A plain composed of water washed out from under a glacier or ice sheet.

Physical Environmental Filter: The process of selecting developable land with slopes less than 25% and located outside a designated 100-year flood plain.

Physical Suitability Filter: The process of selective developable lands based on the proximity and availability of infrastructure.

Physiography: The study of the genesis and evolution of landforms.

Plant Species Names

alkali bluegrass	<i>Poa juncifolia</i>
American ash	<i>Fraxinus pennsylvannia</i>
American vetch	<i>Vicia americana</i>
arrowleaf balsamroot	<i>Balsamorhiza saggitata</i>
bearded wheatgrass	<i>Agropyron caninum</i>
beardtounge	<i>Penstemon spp.</i>
beargrass	<i>Xerophyllum tenax</i>
big bluestem	<i>Andropogon gerardii</i>
big sagebrush	<i>Artemisia tridentata</i>
birdfoot sagebrush	<i>Artemisia pedatifida</i>
black cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>
black greasewood	<i>Atriplex gardneri</i>
black sagebrush	<i>Artemisia arbuscula</i>
blue gramma	<i>Bouteloua gracilis</i>
bluebunch wheatgrass	<i>Pseudorogneria spicata</i>
bluejoint reedgrass	<i>Calamogrostis canadensis</i>
bog birch	<i>Betula glandulosa</i>
boxelder	<i>Acer negundo</i>
broom snakeweed	<i>Gutierrezia sarothrae</i>
bud sagebrush	<i>Artemisia spinescens</i>
Canada buffaloberry	<i>Sheperdia canadensis</i>
Cascade mountain ash	<i>Sorbus scopulina</i>
cheatgrass	<i>Bromus tectorum</i>

chokecherry	<i>Prunus virginiana</i>
common snowberry	<i>Symphoricarpos albus</i>
common yarrow	<i>Achillea millefolium</i>
creeping juniper	<i>Juniperus horizontalis</i>
curl-leaf mountain mahogany	<i>Cercocarpus ledifolius</i>
devil's club	<i>Oplopanax horridum</i>
dotted gayfeather	<i>Liatris punctata</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
dryland bluegrass	<i>Poa arida</i>
dwarf billberry	<i>Vaccinium caespitosum</i>
elk sedge	<i>Carex geyeri</i>
Engelmann spruce	<i>Picea engelmannii</i>
false indigo	<i>Amorpha canescens</i>
foamflower	<i>Tiarella unifoliata</i>
fool's huckleberry	<i>Menziesia ferruginea</i>
fringed sage	<i>Artemisia frigida</i>
golden current	<i>Ribes odoratum</i>
grand fir	<i>Abies grandis</i>
Great Basin wildrye	<i>Elymus cinereus</i>
Great Plains cottonwood	<i>Populus deltoides</i>
green needlegrass	<i>Stipa viridula</i>
green rabbitbrush	<i>Chrysothamnus viscidiflorus</i>
ground dogwood	<i>Cornus unalaskense</i>
grouse whortleberry	<i>Vaccinium scopulorum</i>
hawthorne	<i>Crataegus spp.</i>
heart-leaved arnica	<i>Arnica cordifolia</i>
Hood's phlox	<i>Phlox hoodii</i>
Hooker's fairybell	<i>Disporum hookerii</i>
Hooker's sandwort	<i>Arenaria hookerii</i>
Idaho fescue	<i>Festuca idahoensis</i>
Indian ricegrass	<i>Oryzopsis hymenoides</i>
Japanese brome	<i>Bromus japonicus</i>
Kentucky bluegrass	<i>Poa pratensis</i>
kinnikinnik	<i>Arctostaphylos uva-ursi</i>
limber pine	<i>Pinus flexilis</i>
little bluestem	<i>Schizachrium scoparium</i>

lodgepole pine	<i>Pinus contorta</i>
lungwort	<i>Mertensia spp.</i>
lupine	<i>Lupinus spp.</i>
Lyall's larch	<i>Larix lyallii</i>
many-flowered phlox	<i>Phlox multiflora</i>
mock orange	<i>Philadelphus lewsii</i>
moss campion	<i>Silene acaulis</i>
mountain avens	<i>Dryas octopetala</i>
mountain balm	<i>Ceanothus velutinus</i>
mountain hemlock	<i>Tsuga mertensiana</i>
mountain lover	<i>Pachistima myrsinites</i>
narrow-flowered brome	<i>Bromus vulgaris</i>
narrow-leaved sedge	<i>Carex filifolia</i>
needle and thread grass	<i>Stipa comata</i>
Pacific yew	<i>Taxus brevifolia</i>
paper birch	<i>Betula papyrifera</i>
patata	<i>Monolepis nuttalliana</i>
pathfinder	<i>Adenocaulon bicolor</i>
pinegrass	<i>Calamogrostis rubrens</i>
plains cottonwood	<i>Populus deltoides</i>
plum	<i>Prunus spp</i>
ponderosa pine	<i>Pinus ponderosa</i>
porcupine grass	<i>Stipa spartea</i>
prairie coneflower	<i>Ratibida columnifera</i>
prairie junegrass	<i>Koeleria pyramidata</i>
prairie sandgrass	<i>Calamovilfa longifolia</i>
prickly pear cactus	<i>Opuntia polycantha</i>
purple meadowrue	<i>Thalictrum dasycarpum</i>
pussy toes	<i>Antennaria spp.</i>
queens cup	<i>Clintonia unifoliata</i>
rattleglass	<i>Bromus brizaeformis</i>
red threeawn	<i>Aristida purpurea</i>
redstem ceanothus	<i>Ceanothus sanguineus</i>
redtop bentgrass	<i>Arostis stolonifera</i>
Rocky Mountain helianthella	<i>Helianthella uniflora</i>
Rocky Mountain juniper	<i>Juniperus scopulorum</i>

Rocky Mountain maple	<i>Acer glabrum</i>
Ross's sedge	<i>Carex Rossii</i>
rosy pussytoes	<i>Antennaria microphylla</i>
rough fescue	<i>Festuca scabrella</i>
rubber rabbitbrush	<i>Chrysothamnus nauseosus</i>
Russian olive	<i>Elaeagnus angustifolium</i>
saltsage	<i>Atriplex nuttalli</i>
sand dropseed	<i>Sporobolus cryptandrus</i>
Sandberg's bluegrass	<i>Poa sandbergii</i>
scarlet globemallow	<i>Sphaeralcea coccinea</i>
Scouler's willow	<i>Salix scouleriana</i>
scurf pea	<i>Psoralea tenuifolia</i>
sedge	<i>Carex spp.</i>
serviceberry	<i>Amalanchier alnifolia</i>
sheepfat	<i>Atriplex confertifolia</i>
shiny-leaved spiraea	<i>Spiraea betulifolia</i>
shreddy ninebark	<i>Physocarpus malvaceus</i>
shrubby cinquefoil	<i>Potentilla fruticosa (=Pentafloroides floribunda)</i>
silver sagebrush	<i>Artemisia cana</i>
sticky geranium	<i>Geranium viscosissimum</i>
Subalpine fir	<i>Abies lasiocarpa</i>
sweet-scented bedstraw	<i>Galium triflorum</i>
textile onion	<i>Allium textile</i>
thickspike wheatgrass	<i>Agropyron dasystachum</i>
thimbleberry	<i>Rubus parviflorus</i>
thin-leaved blueberry	<i>Vaccinium membranaceum</i>
three-leaved sage	<i>Artemisia tripartita</i>
tufted hairgrass	<i>Deschampsia caespitosa</i>
twinflor	<i>Linnaea borealis</i>
Utah juniper	<i>Juniperus osteosperma</i>
water birch	<i>Betula occidentalis</i>
Western hemlock	<i>Tsuga heterophylla</i>
Western larch	<i>Larix occidentalis</i>
Western redcedar	<i>Thuja plicata</i>
Western wheatgrass	<i>Agropyron smithii</i>
Western white pine	<i>Pinus monticola</i>

white spruce	<i>Picea engelmannii x glauca</i>
whitebark pine	<i>Pinus albicaulis</i>
wild sarsaparilla	<i>Aralia nudicaulis</i>
willow	<i>Salix spp.</i>
wingscale	<i>Atriplex canescens</i>
winterfat	<i>Eurotia lanata</i>
wolfberry	<i>Symphoricarpos occidentalis</i>
Wood's rose	<i>Rosa woodsii</i>
yucca	<i>Yucca glauca</i>

Polygon: A coverage feature class used to represent areas. A polygon is defined by the arcs that make up its boundary and a point inside its boundary for identification. Polygons have attributes (PAT) that describe the geographic feature they represent.

Potholes: A hole generally deeper than wide.

Point Pollution Source: Pollution with a single, identifiable source, such as a sewage pipe or factory waste system. (see Non-point pollution source).

Prevention of Significant Deterioration of Air Quality (PSD)- with the Clean Air Act amendments of 1977, Congress mandated that states and Indian tribes would establish preconstruction permitting programs designed to ensure that the National Ambient Air Quality Standards are maintained as economic development occurs. Standards for measurement of PSD values typically follow a standardized three-part classification system.

Project Filter: The process of obtaining project approval through local government review.

Purchase/Sale of Development Rights: The permanent conveyance of development rights on a parcel of property that result in a covenant on the land limiting the types of development that can occur.

Quantile: Quantiles are essentially points taken at regular vertical intervals from the cumulative distribution function, dividing ordered data into groups of essentially equal-sized data subsets. In the context of this report quartiles(4 equal size groups) were used, and the results were combined as follows: 1 = <25%, 2 = 25%-75%, 3 = >75%

Quartzite: A granular metamorphic rock composed primarily of quartz.

Raster: A cellular data structure composed of rows and columns for storing images. Groups of cells with the same value represent features. See also grid.

Rate of Return on Equity: the percentage of income received from an investment

Regulatory Filter: The process of determining the "how" land use regulations and environmental laws would affect land use.

Residential: A proposed land use category that includes single-family dwellings, duplexes, condominiums, townhouses, cabins, apartments, associated ancillary uses, and other residential uses normally recognized by local zoning regulations. In addition, "raw" or undeveloped properties might also be identified for residential potential. Analyses in this PEIS included multi-family units in the commercial category, in some cases.

Resource Management Standard (RMS): A specific level of performance that characterizes how various issues and resources will be addressed. In this document, each alternative has its own set of RMSs consistent with its management philosophy.

Rhyolite: A granitic rock with crystals too small to be seen by the unaided eye.

Riparian area: Green zones associated with lakes, reservoirs, estuaries, potholes, springs, bogs, fens, wet meadows, and ephemeral, intermittent or perennial streams. The riparian / wetland zone occurs between the upland or terrestrial zone and the aquatic or deep-water zone.

Rural: Concerning the country, lands not considered to be urban or suburban.

Saline, salinity: A measure of soluble salt accumulation.

Sandstone: Cemented sediment composed primarily from quartz.

Schist: A medium or coarse-grained metamorphic rock where mica minerals form parallel bands.

Scoping: An integral part of the environmental analysis. Scoping requires examining a proposed action and its possible effects; establishing the depth of the environmental analysis needed; determining analysis procedures, data needed and task assignments.

Selection Filter: The process of prioritizing project opportunities based upon fiscal and staffing considerations in addition to perceived market demand for the proposed project.

Sensitive species: A U.S. Forest Service designation for plant or animal species that are vulnerable to declines in population or habitat capability which could be accelerated by land management activities.

Seral: A community susceptible to replacement by another community.

Serotinous: Conifer cones that do not open after the seeds are matured unless heated by fire.

Shale: A sedimentary rock formed from fine textured layered soils.

Siltite: A metamorphosed siltstone.

Special Uses: Commercial, residential, industrial, and conservation use of state lands.

Species of Special Concern: A Montana Natural Heritage Program designation for species which may be very rare or locally abundant but occupying a very restricted range. In either case, they are especially vulnerable to extinction.

Subdivision: A division of a single parcel of land into smaller parcels (lots) by filing a map describing the division, and obtaining approval by a governmental commission (city or county).

Substrata: An underlayer.

Suburban: The area around a city, a transition area between urban and rural, usually residential with small businesses, although modernly an attraction for large industrial and commercial complexes.

Sustained Yield: Management of timber resources to provide sustainable, consistent yields of timber and/or other resources.

Thiessen Polygons: Polygons whose boundaries define the area that is closest to each point relative to all other points. Thiessen polygons are generated from a set of points. They are mathematically defined by the perpendicular bisectors of the lines between all points. A tin structure is used to create Thiessen polygons.

Threatened Species: Species which are likely to become "endangered species" within the foreseeable future through all or a significant portion of their range are designated threatened species in the Federal Register by appropriate Department Secretaries. (Schwarz et al. 1976)

Thrust and block faulted: A reverse fault characterized by a low angle of inclination.

Transfer of Developmental Rights: Land rights associated with a certain parcel, such as land use density, could be transferred to another parcel to accomplish a variety of objectives.

Transitional Filter: The process of selecting lands that have some development potential for residential, commercial, and industrial uses based on proximity to existing land uses.

Trust Mandate: The requirement that State trust lands be managed to provide income for the beneficiaries of the income derived from those lands, including public schools and universities,

Urban: Pertaining to a city or town, a named location where a mix of different developed uses occurs in close proximity to each other.

Ustic soil moisture regime: A condition where moisture is limited but present when condition are suitable for plant growth.

Watershed: The area drained by a river or river system.

Wetlands: Areas that are permanently wet, or intermittently water covered, such as swamps, marshes, bogs, muskegs, potholes, swales, glades, and overflow land of river valleys. Large, open lakes are commonly excluded, but many kinds of ponds, pools, sloughs, holes, and bayous may be included. (Veatch and Humphrys 1966 In: Schwarz et al. 1796)

Xeric temperature regime: Climatic conditions typical of Mediterranean areas where winters are moist and summers are warm and dry.

Zoning: A regulatory tool that enables local government to locate compatible and/or complimentary land uses within specific geographic areas while addressing a number of design, safety and infrastructure issues. It also can be used to achieve other community goals such as the provision of affordable housing, the preservation of significant cultural and historic resources and the efficient provision of community services and infrastructure.

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